General
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SUMMARY

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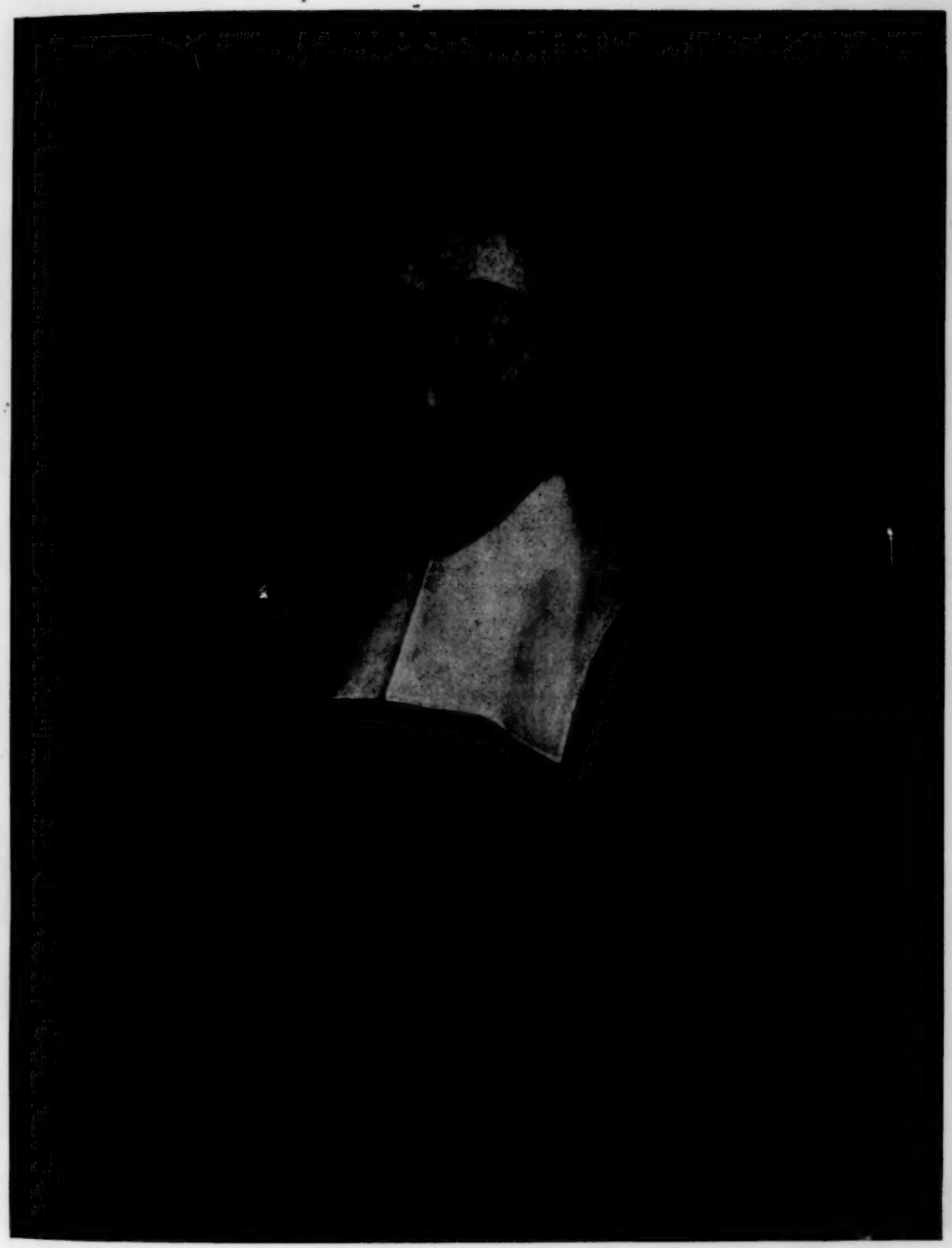
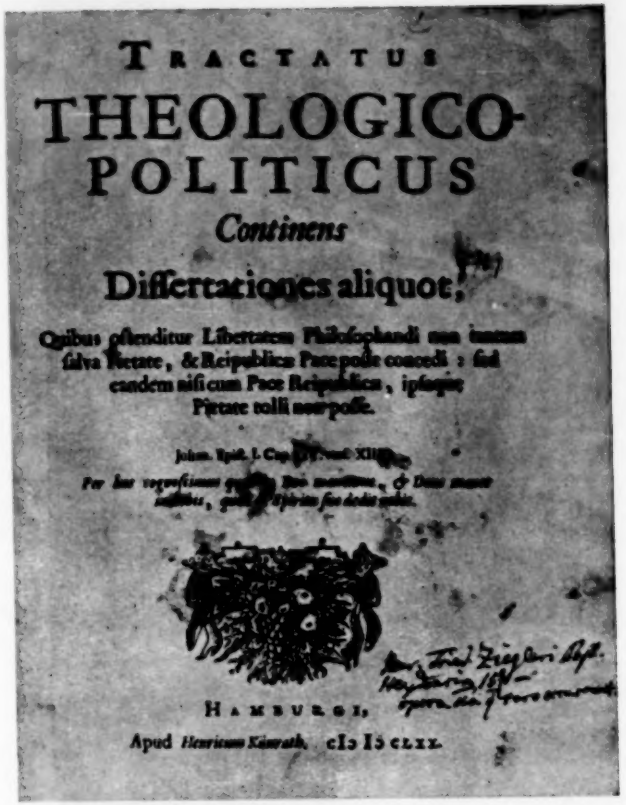
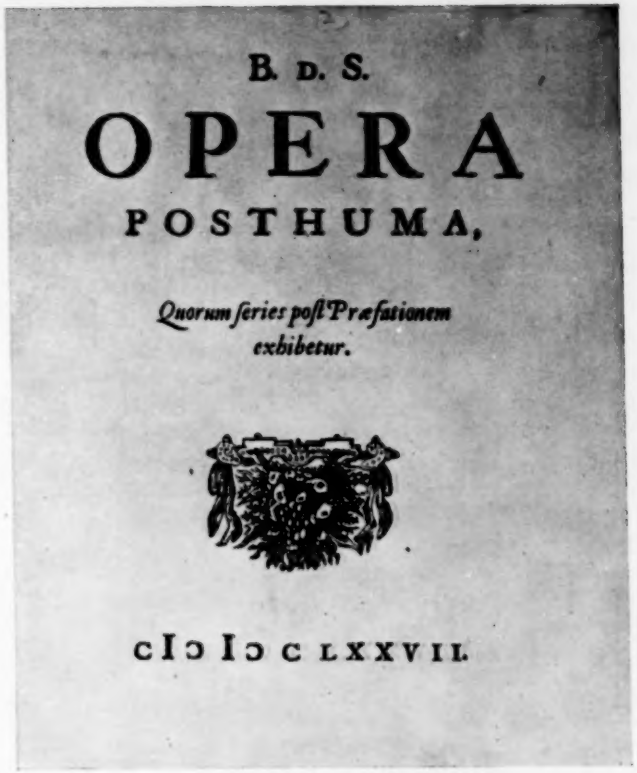


PORTRAIT OF SPINOZA
Aet. 33 or 34 (Wolfenbüttel Library)



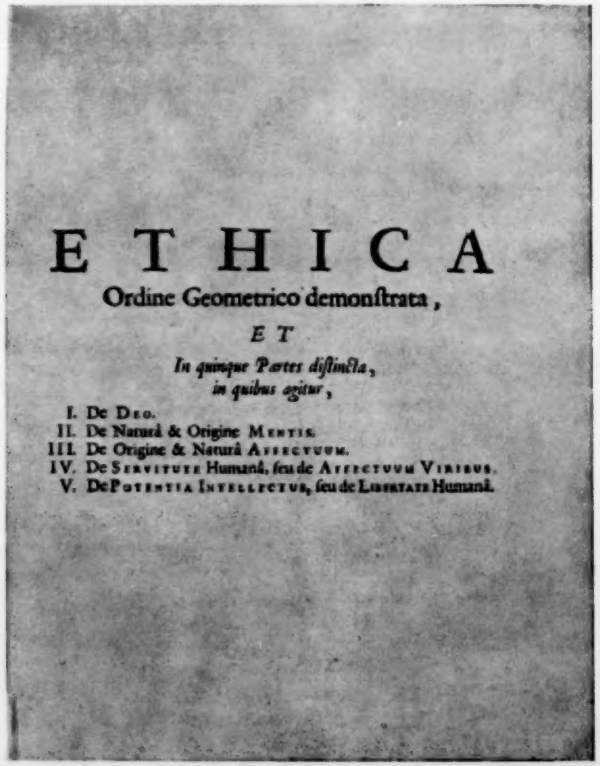
TRACTATUS
THEOLOGICO-
POLITICUS
Continens
Dissertationes aliquot,
Quibus ostenditur Libertatem Philosophandi non tantum salva Pietate, & Reipublicæ Pace posse concedi; sed eandem nisi cum Pace Reipublicæ, ipsaque Pietate tolli non posse.
HAMBURGI,
Apud *Henricum Künrath*. cIↃ IↃ CLXX.

Fig. 2. *Tractatus Theologico-politicus*. Amsterdam (sic), 1670



B. D. S.
OPERA
POSTHUMA,
Quorum series post Præfationem exhibetur.
cIↃ IↃ C LXXVII.

Fig. 3. *Opera posthuma*. Amsterdam, 1677



ETHICA

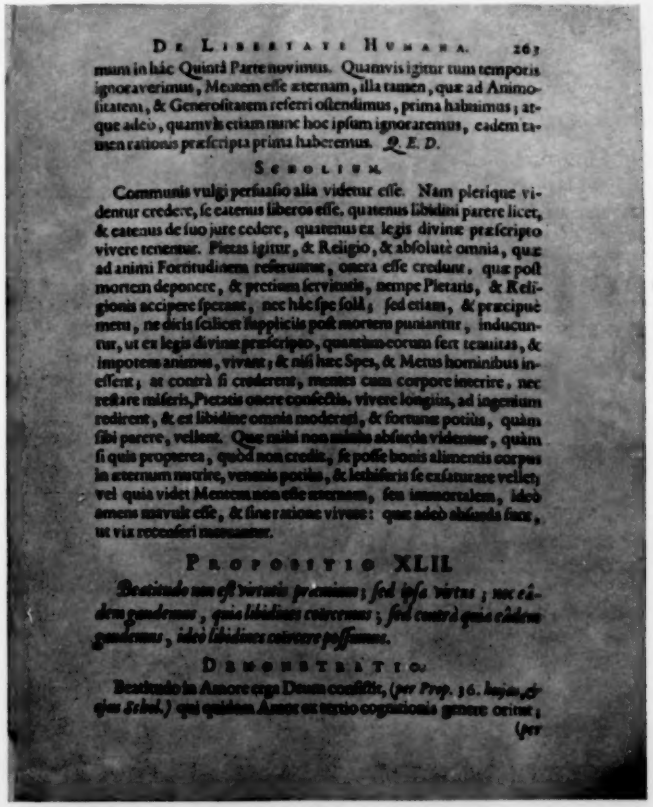
Ordine Geometrico demonſtrata,

ET

In quinque Partes diſtincta,
in quibus agitur,

I. De Deo.
II. De Naturâ & Origine Mentis.
III. De Origine & Naturâ Affectuum.
IV. De Servitute Humanâ, ſeu de Affectuum Viribus.
V. De Potentia Intellectus, ſeu de Libertate Humanâ.

Fig. 4. *Ethica*, 1677



mum in hâc Quintâ Parte novimus. Quamvis igitur tum temporis ignoraverimus, Mentem eſſe æternam, illa tamen, quæ ad Animoſitatem, & Generoſitatem referri oſtendimus, prima habuimus; atque adeò, quamvis etiam nunc hoc ipſum ignoraremus, eadem tamen rationis præſcripta prima haberemus. *Q. E. D.*

Scholium.

Communis vulgi perſuaſio alia videtur eſſe. Nam plerique videntur credere, ſe eatenus liberos eſſe, quatenus libidini parere licet, & eatenus de ſuo jure cedere, quatenus ex legis divinæ præſcripto vivere tenentur. Pietas igitur, & Religio, & abſolutè omnia, quæ ad animi Fortitudinem referuntur, onera eſſe credunt, quæ poſt mortem deponere, & pretium ſervitutis, nempe Pietatis, & Religionis accipere ſperant, nec hâc ſpe ſolâ; ſed etiam, & præcipuè metu, ne dicis ſcilicet ſupplicia poſt mortem puniantur, inducuntur, ut ex legis divinæ præſcripto, quantùm eorum fert tenuitas, & impotens animus, vivant; & niſi hanc Spes, & Metus hominibus ineſſent; at contrà ſi crederent, mentes cum corpore interire, nec reſtare miſeris, Pietatis onere confectis, vivere longius, ad ingenium redirent, & ex libidine omnia moderari, & fortunæ potiùs, quàm ſibi parere, vellent. Quæ mihi non minùs abſurda videntur, quàm ſi quis propterea, quòd non credit, ſe poſſe bonis alimentis corpus in æternum nutrire, venenis potius, & lethiferis ſe exſaturare vellet; vel quia videt Mentem non eſſe æternam, ſeu immortalem, ideò amens mavult eſſe, & ſine ratione vivere: quæ adeò abſurda ſunt, ut vix reconſeri meruerint.

Propositio XLII.

Beatitudo non eſt virtutis præmium; ſed ipſa virtus; nec eâdem gaudemus, quia libidines coërcemus; ſed contrà quia eâdem gaudemus, ideò libidines coërcere poſſumus.

Demonstratio.

Beatitudo in Amore erga Deum conſiſtit, (*per Prop.* 36. *hujus cûm ejus Schol.*) qui quidem Amor ex tertio cognitionis genere oritur; (*per*

Fig. 5. Last but one page of the same.

TRACTATUS POLITICUS;

In quo demonſtratur, quomodò Societas, ubi Imperium Monarchicum locum habet, ſicut & ea, ubi Optimi imperant, debet inſtitui, ne in Tyrannidem labatur, & ut Pax, Libertaſque civium inviolata maneat.

CAPUT I.

§. I. AFfectûs, quibus conflictamur, concipiunt Philoſophi veluti vitia, in quæ homines ſuâ culpâ labuntur; quos propterea ridere, flere, carpere, vel (qui ſanctiores videri volunt) deteſtari ſoleut. Sic ergo ſe rem divinam facere, & ſapientiæ culmen attingere credunt, quando humanam naturam, quæ nullibi eſt, multis modis laudare, & eam, quæ revera eſt, dictis lacerſere nôrunt. Homines namque, non ut ſunt; ſed, ut eoſdem eſſe vellent, concipiunt: unde factum eſt, ut plerumque pro Ethicâ Satyram ſcripſerint, & ut nunquam Politicam conceperint, quæ poſſit ad uſum revocari; ſed quæ pro Chimærâ haberetur, vel quæ in Utopiâ, vel in illo Poetarum aureo ſeculo, ubi ſcilicet minime neceſſe erat, inſtitui potuiſſet. Cùm igitur omnium ſcientiarum, quæ uſum habent, tum maximè Politices Theoria ab ipſius Praxi diſcrepare creditur, & regendæ Reipublicæ nulla minus idonei æſtimantur, quàm Theoretici, ſeu Philoſophi.

§. II. At Politici contrà hominibus magis inſidiari, quàm conſulere creduntur, & potius callidi, quàm ſapientes æſtimantur. Docuit nimirum eoſdem experientia, vitia fore, donec homines. Humanam

Fig. 6. *Tractatus politicus*, 1677

TRACTATUS De INTELLECTUS EMENDATIONE,

Et de viâ, quâ optimè in veram rerum Cognitionem dirigitur.

POſtquam me Experientia docuit, omnia, quæ in communi vitâ frequenter occurrunt, vana, & futilia eſſe: cùm viderem omnia, à quibus, & quæ timebam, nihil neque boni, neque, mali in ſe habere, niſi quatenus ab iis animus movebatur; conſtitui tandem inquirere, an aliquid daretur, quod verum bonum, & ſui communicabile eſſet, & à quo ſolo, rejectis cæteris omnibus, animus afficeretur; imò an aliquid daretur, quo invento, & acquiſito, continuâ, ac ſummâ in æternum fruerer lætitiâ. Dico, *me tandem conſtituiſſe*: primò enim intuitu inconſultum videbatur, propter rem tunc incertam certam amittere velle: videbam nimirùm commoda, quæ ex honore, ac divitiis acquiruntur, & quòd ab iis quærendis cogebar abſtinere, ſi feriam rei alii novæ operam dare vellem: & ſi fortè ſummæ felicitas in iis eſſet ſita, perſpiciebam, me eâ debere carere; ſi verò in iis non eſſet ſita, eiſque tantùm darem operam, tum etiam ſummâ carerem felicitate. Volvebam igitur animo, an fortè eſſet poſſibile ad novum inſtitutum, aut ſaltem ad ipſius certitudinem pervenire, licet ordo, & commune vitæ meæ inſtitutum non mutaretur, quod ſæpe fruſtrà tentavi. Nam quæ plerumque in vitâ occurrunt, & apud homines, ut ex eorum operibus colligere licet, tanquam ſummum bonum æſtimantur, ad hæc tria rediguntur; divitias ſcilicet,

 hono-

Fig. 7. *Tractatus de intellectus emendatione*, 1677

Spinoza

1632-1677-1927.

Whenever I happen to be in The Hague, one of my first visits is to the statue of SPINOZA which was erected (in 1880) quite near the house where he roomed during the last years of his life. It is a very humble neighbourhood, this Paviljoens Gracht, and the statue is one of moderate size. Great men do not need the appearances of greatness, nor the regalia of power. It is even better for them to be despised and rejected of men than to be admired for irrelevant reasons. As I am standing near the unpretentious monument, I can almost see him rise from his chair and walk back to his room near by. A man of forty, of medium size, with an olive complexion betraying his Spanish ancestry, black eyebrows and long curly hair, poorly dressed, he walks slowly, meditatively, not noticing a few burghers pointing at him from a distance : « Look, there goes the accursed SPINOZA. »

Accursed, thrice accursed. He had been excommunicated by his own brethren as early as 1656. Cast off by the ghetto, he had never joined any Christian community, though he felt a deep sympathy for the Collegiants, a persecuted sect of Remonstrants, and lived for many years with some of them in Rhijnsburg (1), their headquarters, and later in Voorburg. Soon after the appearance of his first original work, the *Tractatus theologico-politicus*, a noble plea for intellectual toleration, published anonymously in 1670, it was condemned by the Dutch Synod. A few years later it was banned also by the States-general of Holland and, needless to say, it had been promptly entered in the Roman Index. For almost a century after his death, he was generally detested and spoken of with contempt and derision.

What was his crime ? What had he done to deserve such universal

(1) Near Leiden. The house occupied by him is still standing and has been converted into a SPINOZA museum. Its extreme simplicity is very impressive.

reprobation ? Again, in my mind's eye, I see him sitting in his poorly furnished little room, pondering quietly ; all the energy which an inexorable illness left him, his whole body and soul dedicated to a single great purpose. He wanted to think out more clearly, more deeply and with greater rigor than had ever been done before, the ultimate reasons of life, the conditions of understanding, the logic of virtue. I see him, sitting in his chair, lost in thought, oblivious of all the trifles and of many of the necessities of life, an ascetic in fact though he did not believe in asceticism. He was wistful and somewhat depressed — how could he not be having to face in youth the cruelty of disease and the injustice of his fellow men —, but he was not sad, or at any rate he made heroic efforts not to be sad, for he considered sadness an imperfection, a diminution of one's being. Nor did he believe in humility — that is, in the selfconscious and hypocritical humility enforced from the outside – and for the same reason. Such humility indeed is a form of sadness, and yet he himself was as genuinely humble as one could be. His humility was that of the man of science who does his best to determine the truth and realizes all the time that he is himself of little, if any, account in the presence of it. He had set for himself such a high purpose, that there was no place in his soul not only for vanity, but even for ambition as most good men, including philosophers, experience it. For example, he was not anxious to publish his works, and the thought that they would appear anonymously after his death satisfied him. The important thing was to find the truth or rather to strive for it with every possible diligence ; if the results of his labor were worth while they would be published sooner or later, and what mattered was the results themselves, not any accident relative to their discovery.

I was right, I believe, in calling SPINOZA a man of science. Deeply trained in Jewish scholasticism, Cartesian philosophy and Cartesian science (he wrote a *Treatise on the Rainbow*), it occurred to him that the rigorous form of argument used by EUCLID to establish geometrical truth might be extended to the demonstration of philosophical truth. His first published book was a geometrical interpretation of Cartesian philosophy (2). For some fifteen years

(2) RENATI DES CARTES *Principiorum philosophiæ* pars i. et ii. more geometrico demonstratæ. Accesserunt Cogitata metaphysica. 140 p. Amsterdam, 1663.

(c. 1661 to c. 1675) most of his energy was spent in the elaboration of a treatise of ethics which he wanted to be as exact as the geometrical Elements. This immense effort was not entirely successful, but as far as I know, no other philosopher has gone beyond SPINOZA in the direction indicated by him. He died of consumption at the age of forty four, on Sunday, February 21, 1677 — that is, just a quarter of a millennium ago. His *Ethics*, as also the treatise on the *Improvement of the Understanding* which forms a sort of epistemological introduction to it, appeared in the same year in the Opera Posthuma. And though this effort was a partial failure, it will live as long as EUCLID's Elements, which had been almost a complete success. It is one of the noblest monuments of human endeavour.

To eke out the wherewithal of his humble life, SPINOZA ground lenses for optical instruments. The demand for such lenses had been increasing steadily since the beginning of the century. This was a splendid occupation for a philosopher ; it required infinite patience, but the best part of his mind remained free to roam while his hands were busy. Just as there were many good women in the old days who could not think without knitting, I can conceive that this grinding business had become a second nature to him and that it was possibly a help in the accomplishment of his higher task. The fact is that his lenses were appreciated and they gave him the modest independence which he craved. He did not have to peddle his wisdom ; he was not obliged to compromise even if all the world cursed him ; he could afford to decline a professorship at the University of Heidelberg. What did the licensed dealers in philosophy of the University of Leiden think of him ? But never mind what they thought. Never mind whether they considered him a « God-intoxicated » man, or an atheist, a Benedict, or as others preferred to call him, a Maledict. He devoted his frail life to a heroic task, and though his effort ended in partial failure, it was a glorious failure, not in any way imputable to him, but to the supreme difficulty of the problem to which he had addressed himself. The philosopher can never succeed as completely as the pure man of science ; he is bound to fail almost by definition, for if he succeeded he would not be counted any more as a philosopher but as the founder of a new branch of science. If SPINOZA had succeeded, ethics would have become

a separate subject of learning, as separate from philosophy as geometry or chemistry. This may still be accomplished, though it will involve almost insuperable difficulties. For all excellent things are as difficult as they are rare (3). In any case, the urge which dominated his activity remains, and whoever feels it in him, can not but think of BARUCH SPINOZA — that contemptible little Jew — with gratitude and veneration. He has lighted a light high up in the dark sky ; the more scientifically minded of the philosophers and the more philosophically minded of the scientists are ever on the look out for it ; it helps them as a beacon helps the mariner. It is not simply a guidance, but a consolation in the darkness. There is no truth except in the essence of things, and that essence can not be found except in the things which are eternal and fixed, as are our geometrical concepts. We can not hope to understand things unless we consider them from that point of view, *sub specie aeternitatis*. Nor can we hope, if we are intelligent, to be truly happy unless our hearts have reached the same altitude, the same serenity. « Happiness is not the reward of virtue but virtue itself. »

Cambridge, Mass.
April 25, 1927. GEORGE SARTON.

Illustrations.

Plate 1, fig. 1. Portrait of SPINOZA, painted by an unknown artist, probably in Amsterdam, c. 1665-66, SPINOZA being then 33 or 34 years old. (Braunschweigische Landesbibliothek, Wolfenbüttel). This is one of the very few portraits of certain authenticity, and ERNST ALTKIRCH, who has made a special study of this subject, is inclined to consider it as the most significant. See his *Spinoza im Porträt* (VIII+112 S. mit 28 Taf., Jena, DIEDERICHS, 1913; pp. 43, 57). I am indebted for a photograph of it to Dr HEINRICH SCHNEIDER, Chief Librarian of the City Library of Lübeck, and to Dr H. HERBST, Director of the Wolfenbüttel Library. Their courtesy is duly appreciated.

Plate 2, fig. 2. Title page of *Tractatus Theologico-politicus*, SPINOZA's first great work (234 pp.). It was not printed in Hamburg, but in Amsterdam, by CHRIST. CONRAD, 1670. See ANTONIUS VAN DER LINDE (1833-97) : *Spinoza. Bibliographie* ('s Gravenhage, 1871; x + 113 pp.; p. 2). The *Cogitata metaphysica*, appended to his commentary on DESCARTES' *Principles*, had been published in Amsterdam by JOH. RIEWERTS, seven years before.

Plate 2, fig. 3. Title-page of the *Opera Posthuma* printed by JOH. RIEWERTS, in Amsterdam, 1677 (614+112 pp.). This volume contains the *Ethica* (pp. 1-264),

(3) « Sed omnia præclara tam difficilia quam rara sunt ». These are the last words of the *Ethics*.

the *Tractatus politicus* (pp. 264-354), the *Tractatus de intellectus emendatione* (pp. 355-392), *Epistolæ* (pp. 393-614), and the *Compendium grammatices linguæ hebrææ* (pp. 1-112). All of the following illustrations are derived from this double volume.

Plate 3, *fig.* 4. Sub-title of the *Ethica*, before p. 1, showing its main subdivisions.

Plate 3, *fig.* 5. Last but one page of the *Ethica*. See, at the bottom, Propositio XLII; Beatitudo non est virtutis præmium, sed ipsa virtus. . .

Plate 4, *fig.* 6. First page of the *Tractatus Politicus*, a treatise which is worth re-reading at a time when political freedom is jeopardized in many countries.

Plate 4, *fig.* 7. First page of the *Tractatus de intellectus emendatione*.

These illustrations are here published for the special benefit of readers who have no opportunity to handle the original books.

G. S.

"Essay pour les Coniques" of Blaise Pascal

Translated by FRANCES MARGUERITE CLARKE

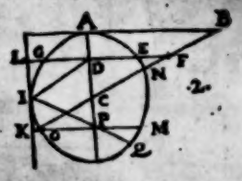
Introductory Note

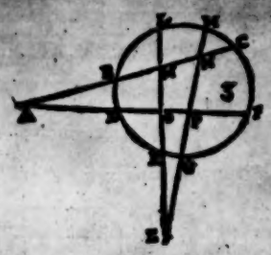
In the year 1639, when BLAISE PASCAL was sixteen years old, he wrote a brief statement which was doubtless intended by him as the first step in an extended study of conics to be undertaken at some future time. In the following year it was printed in the form of a broadside and bore the simple title, « Essay povr les coniqves. Par B. P. » Of this single page only two copies are known, one at Hannover among the papers of LEIBNIZ, and the other in the Bibliothèque nationale at Paris.

The « essay » attracted little attention at the time and still less in the century following. MERSENNE saw it before publication and wrote to DESCARTES concerning it, afterward sending the printed copy. The latter, however, showed slight interest in the ability of this « enfant de 16 ans », thinking that he had done little but read « Monsieur DES ARGUES ». LEIBNIZ, however, recognized the fact that PASCAL had made a noteworthy advance in the study of conics, and DESARGUES spoke highly of his ability.

The « essay » has long been known through its publication in various editions of PASCAL's works, although often imperfectly transcribed. It was published in facsimile, with a perfect transcription and with historical and explanatory notes, in the edition of BRUNSCHVICG and BOUTROUX (tome I, Paris, 1908, pp. 243-260). It seems not, however, to have hitherto appeared in English, and hence its publication in facsimile with a free translation by MISS CLARKE is a welcome contribution to the knowledge of many readers concerning the ability of this « enfant de 16 ans » and the advance made in the seventeenth century in the study of geometry in general and of conics in particular.

DAVID EUGENE SMITH.





ESSAY POVR LES CONIQVES. Par B. P.

DEFINITION PREMIERE.

QVAND plusieurs lignes droictes concourent à mesme point, ou sont toutes pareilles entr'elles, toutes ces lignes sont dites de mesme ordre ou de mesme ordonnance; & la multitude de ces lignes, est dite ordre de lignes, ou ordonnance de lignes.

DEFINITION II.

Par le mot de section de Cone nous entendons la circonference de Cercle, l'Elipse, l'Hyperbole, la Parabole & L'angle rectiligne, d'autant qu'vn Cone coupe paralellement à sa base, ou par son sommet ou des trois autres sens qui engendrent l'Elipse, l'Hyperbole & la parabole engendre dans la superficie Conique, ou la circonference d'vn Cercle ou vn Angle, ou l'Elipse, ou l'Hyperbole, ou la parabole.

DEFINITION III.

Par le mot de droite mis seul, nous entendons ligne droite.

LEMM. I.

Figure. I. Si dans le plan, M, S, Q du point M partent les deux droites MK, MV, & du point S, partent les deux droites SK, SV, & que K, soit le concours des droites MK, SK, & V, le concours des droites, MV, SV, & A, le concours des droictes MA, SA, & μ, le concours des droictes MV, SK, & que par deux des quatre points, A K μ V, qui ne soient point en mesme droicte auec les points, M, S: comme par les points, K, V, passe la circonference d'vn cercle coupant les droites MV, MP, SV, SK, es points, O, P, Q, N, & dis que les droites, MS, NO, PQ, sont de mesme ordre.

LEMM. II.

Si par la mesme droite passent plusieurs plans qui soient coupez d'vn autre plan, toutes les lignes des sections de ces plans sont de mesme ordre auec la droite par laquelle passent les dits plans.

Fig. I. Ces deux Lemmes posez & quelques faciles consequences d'iceux nous demonstrerons que les mesmes choses estant posées qu'au premier Lemme, si par les points, K, V, passe vne quelconque section de Cone qui coupe les droites MK, MV, SK, SV, és points, P, O, N, Q, les droites MS, NO, PQ, seront de mesme ordre, cela sera vn troisiéme Lemme.

Ensuitte de ces trois Lemmes & de quelques consequences d'iceux nous donnerons des Elemens Coniques complets, à sçavoir toutes les propriétez des diametres & costez droits, des tangentes &c. la restitution du Cone presque sur toutes les données, la description des sections de Cone par points, &c.

Fig. I. Quoy faisant, nous enonçons les proprietez que nous en touchons d'vne maniere plus vniuerselle qu'à l'ordinaire. Par exemple celle-cy, si dans le plan M S Q, dans la section de Cone, P K V, sont menées les droictes AK, AV, atteignantes la section aux poincts P K, Q V, & que de deux de ces quatre poincts qui ne sont point en mesme droicte auec le poinct A, comme par les poincts K, V, & par deux poincts N, O, pris dans le bord de la section sont menées quatre droictes K N, K O, V N, V O, coupantes les droictes A V, A P, aux poincts L, μ, T, S, ie dis que la raison composée des raisons de la droicte P M, à la droicte M A, & de la droicte A S, à la droicte S Q, est la mesme que la composée des raisons de la droicte P L, à la droicte L A, & de la droicte A T, à la droicte T Q.

Fig. I. Nous demonstrerons aussi que s'il y a trois droictes D E, D G, D H, que les droictes A P, A R, coupent aux poincts F, G, H, C, γ, B, & que dans la droicte D C, soit determiné le poinct E; la raison composée des raisons du rectangle E F, en F G, au rectangle de E C, en C γ, & de la droicte A γ, à la droicte A G, est la mesme que la composée des raisons du rectangle E F, en F H, au rectangle E C, en C B, & de la droicte A B, à la droicte A H. Et est aussi la mesme que la raison du rectangle des droictes F E, F D, au rectangle des droictes, C E, C D, partant si par les poincts E, D, passe vne section de Cone qui coupe les droictes A H, A B, és poincts P, K, R, ψ, la raison composée des raisons du rectangle des droictes E F, F C, au rectangle des droictes E C, C γ, & de la droicte γ A, à la droicte A G, sera la mesme que la composée des raisons du rectangle des droictes F K, F P, au rectangle de droictes C R, C ψ, & du rectangle des droictes A R, A ψ, au rectangle des droictes A K, A P.

Fig. III. Nous demonstrerons aussi que si quatre droictes A C, A F, E H, E L, s'entrecoupent és poincts N, P, M, O, & qu'vne section de Cone coupe lesdites droictes és poincts C, B, E, D, H, G, L, K, la raison composée des raisons du rectangle de M C, en M B, au rectangle des droictes P F, P D, & du rectangle des droictes A D, A F, au rectangle des droictes A B, A C, est la mesme que la raison composée des raisons du rectangle des droictes M L, M K, au rectangle des droictes P H, P G, & du rectangle des droictes E H, E G, au rectangle des droictes E K, E L.

Fig. I. Nous demonstrerons aussi cette proprieté, dont le premier inuenteur est M' Desargues Lyonnois, vn des grands esprits de ce temps, & des plus versez aux Mathematiques, & entr'autres aux Coniques, dont les escripts sur cette matiere, quoy qu'en petit nombre, en ont donné vn ample tesmoignage à ceux qui en auront voulu secouoir l'intelligence: & veux bien aduoüer que ie doibs le peu que i'ay trouué sur cette matiere à ses escrits, & que i'ay taché d'imiter autant qu'il m'a esté possible la methode sur ce subject, qu'il a traitté sans se seruir du triangle par l'axe: Et traittant generalement de toutes les sections de Cone, la proprieté merueilleuse dont est question est telle: si dans le plan M S Q y a vne section de Cone P Q V, dans le bord de laquelle ayant pris les quatre poincts K, N, O, V, sont menées les droictes K N, K O, V N, V O, de sorte que par vn mesme des quatre poincts ne passent que deux droictes, & qu'vne autre droicte coupe tant l'abord de la section aux poincts R, ψ, que les droictes K N, K O, V N, V O, és poincts x y Z ϑ, ie dis que comme le rectangle des droictes Z r, Z ψ, est au rectangle des droictes y r, y ψ, ainsi le rectangle des droictes ϑ r, ϑ ψ, est au rectangle droictes x r, x ψ.

Fig. II. Nous demonstrerons aussi que si dans le plan de l'hyperbole ou de l'elipse, ou du cercle A G E, dont le centre est C, on mene la droicte A B, touchante au poinct A, la section, & qu'ayant mené le diametre C A, on coupe la droicte A B, dont le quarré soit égal au quart du rectangle de la figure, & qu'on mene C B, puis quelque droicte qu'on mene, comme D E, parallele à la droicte A B, coupante la section en E, & les droictes A C, C B, és poincts D F, si la section A G E, est vne elipse ou vn cercle, la somme des quarrez des droictes D E, D F, sera egale au quarré de la droicte A B, & dans l'hyperbole la difference des mesmes quarrez des droictes D E, D F, sera egale au quarré de la droicte A B.

Nous deduirons aussi quelques problemes, par exemple d'vn poinct donné mener vne droicte touchante vne section de Cone donnée.

Trouuer deux diametres conjuguez en angle donné.

Trouuer deux diametres en angle donné & en raison donnée.

Nous mettons plusieurs autres Problemes & Theoremes & plusieurs consequences des precedens, mais la defiance que i'ay de mon peu d'experience & de capacité ne me permet pas d'en asseurer dauantage n'estant qu'il ait paru à l'examen des habiles gens, qui voudront nous obliger d'en prendre la peine: quoy qu'il en soit si l'on iuge que la chose merite d'estre continuée, nous essayerons de la pousser iusques où Dieu nous donnera la force de la conduire.

A PARIS, M. DC. XL.

Isis, pl. 5-6

UNIV. OF MICH.

ESSAY ON CONICS

First Definition

When several straight lines meet at the same point, or are parallel to each other, all these lines are said to be of the same order or of the same *ordonnance*, and the totality of these lines is termed an order of lines, or an *ordonnance* of lines (1).

Definition II

By the expression " conic section ", we mean the circle, ellipse, hyperbola, parabola, and an angle; since a cone cut parallel to its base, or through its vertex, or in the three other directions which produce respectively an ellipse, a hyperbola, and a parabola, produces in the conic surface, either the circumference of a circle, or an angle, or an ellipse, a hyperbola, or a parabola.

Definition III

By the word « droite » (straight) used alone, we mean « ligne droite » (straight line) (2).

Lemma I

If in the plane M, S, Q, two straight lines MK, MV, are drawn from point M and two lines SK, SV from point S ; and if K be the point of intersection of the lines MK, SK ; V, the point of intersection of the lines MV, SV; A, the point of intersection of the lines MA, SA; and μ, the point of intersection of the lines MV, SK ; and if through two of the four points A, K, μ, V, which can not lie in the same line with points M, S, and also through points K, V, a circle passes cutting the lines MV, MP, SV, SK at points O, P, Q, N, then I say that the lines MS, NO, PQ, are of the same order.

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(1) This definition is taken almost word for word from DESARGUES. See the notes to the BRUNSCHVICG and BOUTROUX edition, t. I., Paris, 1908. This translation is made from the facsimile of the original as given in this edition, and acknowledgment is hereby made of the assistance rendered by these notes in determining the meaning of several passages. It should also be said that the text of this edition is in marked contrast to the imperfect one given in the Paris edition of 1819.

(2) In this translation, the word « line », meaning a straight line-segment, will be used for « droite».

Lemma II

If through the same line several planes are passed, and are cut by another plane, all lines of intersection of these planes are of the same order as the line through which these planes pass.

On the basis of these two lemmas and several easy deductions from them, we can demonstrate that if the same things are granted as for the first lemma, that is, through points K, V, any conic section whatever passes cutting the lines MK, MV, SK, SV in points P, O, N, Q, then the lines MS, NO, PQ will be of the same order. This constitutes a third lemma.

By means of these three lemmas and certain deductions, therefrom, we propose to derive a complete ordered sequence of conics, (3) that is to say, all the properties of diameters and other straight lines, (4) of tangents, &c., the construction of the cone from substantially these data, the description of conic sections by points, etc.

Having done this, we shall state the properties which follow, doing this in a more general manner than usual. Take for example, the following : If in the plane MSQ, in the conic PKV, there are drawn the lines AK, AV, cutting the conic in points P, K, Q, V ; and if from two of these four points, which do not lie in the same line with point A, — say the points K, V, and through two points N, O, taken on the conic, there are produced four lines KN, KO, VN, VO, cutting the lines AV, AP at points L, M, T, S, — then I maintain that the proportion composed of the ratios of the line PM to the line MA, and of the line AS to the line SQ, is the same as the proportion composed of the ratio of the line PL to the line LA, and of the line AT to the line TQ.

We can also demonstrate that if there are three lines DE, DG, DH that are cut by the lines AP, AR at points F, G, H, C, γ, B, and if the point E be fixed in the line DC, the proportion composed of the ratios of the rectangle EF.FG to the rectangle EC. Cγ, and of the line Aγ to the line AG, is the same as the ratio of the rectangle EF.FH to the rectangle EC.CB, and of the line AB to the line AH. The same is also true with respect to the ratio of the rectangle FE.FD to the rectangle CE.CD. Consequently,

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(3) ...des éléments coniques complets.
(4) ...et côtés droits.

if a conic section passes through the points E, D, cutting the lines AH, AB in points P, K, R, ψ, the proportion composed of the ratio of the rectangle of these lines EF, FC, to the rectangle of the lines EC, Cγ, and of the line γ A to the line AG, will be the same as the ratio of the rectangle of the lines FK, FP, to the rectangle of the lines CR, Cψ, and of the rectangle of the lines AR, Aψ, to the rectangle of the lines AK, AP.

We can also show that if four lines AC, AF, EH, EL intersect in points N, P, M, O, and if a conic section cuts these lines in points C, B, F, D, H, G, L, K, the proportion consisting of the ratios of rectangle MC. MB to rectangle PF. PD, and of rectangle AD.AF to rectangle AB.AC, is the same as the proportion composed of the ratios of rectangle ML.MK to the rectangle PH.PG, and of rectangle EH.EG to rectangle EK.EL.

We can also demonstrate a property stated below, due to M. DESARGUES of Lyons, one of the great geniuses of this time and well versed in mathematics, particularly in conics, whose writings on this subject although few in number give abundant proof of his knowledge to those who seek for information. I should like to say that I owe the little that I have found on this subject to his writings, and that I have tried to imitate his method, as far as possible, in which he has treated the subject without making use of the triangle through the axis.

Giving a general treatment of conic sections, the following is the remarkable property under discussion : If in the plane MSQ there is a conic section PQN, on which are taken four points K, N, O, V from which are drawn the lines KN, KO, VN, VO, in such a way that through the same four points only two lines may pass, and if another line cuts the conic at points R, ψ, and the lines KN, KO, VN, VO, in points X, Y, Z, δ, then as the rectangle ZR.Zψ is to the rectangle γR.$\gamma\psi$, so the rectangle δR. $\delta\psi$ is to the rectangle XR.Xψ.

We can also prove that, if in the plane of the hyperbola, the ellipse, or the circle AGE of which the center is C, the line AB is drawn touching the section at A, and if having drawn the diameter we take line AB such that its square shall be equal to the square of the figure (5), and if CB is drawn, then any line such as

(5) In order that the square of segment AB, which is equal to DE + DF, shall be equal to one fourth of the circumscribed rectangle, the conic must be

DE, parallel to line AB and cutting the section in E, and the lines AC, CB in points D, F, then if the section AGE is an ellipse or a circle, the sum of the squares of the lines DE, DF will be equal to the square of the line AB; and in the hyperbola, the difference between the same squares of the lines DE, DF will be equal to the square of the line AB.

We can also deduce [from this] several problems ; for example :

From a given point to draw a tangent to a given conic section.

To find two diameters that meet in a given angle.

To find two diameters cutting at a given angle and having a given ratio.

There are many other problems and theorems, and many deductions which can be made from what has been stated above, but the distrust which I have, due to my little experience and capacity, does not allow me to go further into the subject until it has passed the examination of able men who may be willing to take this trouble. After that if someone thinks the subject worth continuing, I shall endeavor to extend it as far as God gives me the strength.

At Paris, M.DC.XL.

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a circle. If the conic is an ellipse, AB will be taken equal to the axis which is perpendicular to CA.

DESARGUES treated analogous questions in his *Brouillon Projet* (Œuvres de DESARGUES, I, p. 202 et p. 284).

Attention should be called to the fact that the statements of both DESARGUES and PASCAL immediately lead up to the equation of conics.

The Teaching of Elementary Geometry in the seventeenth century

INTRODUCTION

Geometry as found in the text-book written by EUCLID proved itself for centuries so admirable an instrument of instruction that attempts at changes in the selection or treatment of the material were made but slowly. These changes do not easily lend themselves to systematic study. In consequence, our knowledge of the development of geometry as taught today remains somewhat incomplete. The study of the progress of both arithmetic and algebra after the invention of printing is far more complete.

This study covers an important period in the development of geometry, touching vitally also the evolution of surveying and trigonometry. It is only by such detailed studies that the very real progress of geometry, beyond EUCLID, can be shown.

In attempting to cover the seventeenth century text-books in this subject one attempts a task which one can hardly hope to achieve. However it may safely be asserted that the large group of manuals examined and studied give precise and definite notions of the current procedure of that century.

The bibliography is, of course, not entirely exhaustive. Consequently, the communication to the author of this article of additional titles of works found in either American or European libraries is highly desirable.

It is to be hoped that similar studies of the geometry text-books of the fifteenth and eighteenth centuries may soon be added so as to complete our knowledge of the evolution of one of the fundamental studies in the secondary school curriculum.

L. C. KARPINSKI.

I. CHECKLIST OF SEVENTEENTH CENTURY TREATISES ON ELEMENTARY GEOMETRY.

BASED UPON THE STUDY OF AMERICAN LIBRARIES.

Only those works are here listed which the author has exami-

ned. Attention is called in the remarks to the number and dates of other editions.

To indicate the library in which are found the books examined, the following abbreviations are used : John Crerar Library, Chicago, Ill., (JC); Library of the University of Michigan, (UM); Columbia University Library, (CU); Library of David Eugene Smith, Teachers College, Columbia University, (DES); New York Public Library, (NYP); and the Library of George A. Plimpton, esq., New York City, (GAP).

The author is greatly indebted to Professor L. C. KARPINSKI of the University of Michigan, for examining the manuscript, giving valuable suggestions and writing an introductory note. Further acknowledgment of indebtedness is made to Professor DAVID EUGENE SMITH and Mr. GEORGE A. PLIMPTON, esq., of New York City, for the use of their extremely valuable private libraries. Finally, due gratitude is expressed to those of the various public libraries mentioned above who aided the author in making a study of the following works.

ALSTED, JOHANN HEINRICH (1588-1638). *Methodus admirandorum mathematicorum;* complectens novem libros matheseos universæ : in quorum 1. Mathematica generalis, 2. Arithmetica, 3. Geometria, ... 9. Architectonica. 1st. ed., 532 (12), (59), Herborn, 1613. (GAP).

The appendix of 59 pp. contains « Bibliothecam et Scholam Mathematicam ». 2nd. ed. Herborn, 1623; 3d. ed., ib., 1641 (UM); 4th. ed., ib., 1657 .Wrote also « *Elementa mathematica* », Frankfurt, 1611, containing seven parts, one of which is on « geometria ».

Anonymous. *The Elements or Principles of Geometrie* : collected from several authors and reduced into a shorter method - - -. (7) (20), 142, (14) pp., London, 1684 (GAP).

This edition was prepared for the special use of « young RALPH FREMAN». Another edition London, 1684 (UM), was « publicly dedicated ».

ARDÜSER, JOHANN (1584-1665). *Geometriæ, Theoricæ et Practicæ.* XII Bücher/ Inn welchen die Geometrischen Fundament Euclidis, vnd der selben gebrauch/ auff das kürtzest/ vnnd leichtest/ als in einem Handbuch beschriben werden. Allen Baw- und Kriegsverstendigen/ Feldmessern/ und andern Kunst-liebenden/ zu nutz und wohlgefallen in Truck geben. (10), 279 doub. pp., Zürich, 1627 (UM).

Another edition with 14 books appeared Zürich, 1646 (UM).

ARNAULD, ANTOINE (1612-1698). *Nouveaux Éléments de Géométrie.* 2nd ed., (18), 400 pp. Paris, 1683 (NYP).

A book of great influence. 1st. ed., Paris, 1667; reprint, ib. 1690 (NYP).

BAROCIUS, FRANCISCUS (circ. 1538-1587). *Cosmographia in quatvor libros distribvta.* 1st. ed., 136, 349, 30 pp., Venice, 1585, (DES).

There was another edition Venice, 1598.

BARROW, ISAAC (1630-1677). *Elementorum Euclidis Libri XV.* Breviter ac succincte demonstrati operâ & Studio M. Js. BARROW. (6), 424 pp., Osnabrück, 1676 (GAP).

1st. ed., Cambridge, 1655.

BARTOLI, COSIMO (1503-1572). *Del modo di misurare le distantie, le superficie,* - - - -. 2nd. ed., 148 doub. pp., Venice, 1589 (DES).

First ed., Venice, 1564.

BEAULIEU, LUDOVICUS LE BLANC DE, (1614-1675). *La Géometrie française, ov la pratique aissée pour apprendre sans maistre,* - - -, (22), 103, (15), 37, 24 pp., Paris, 1676 (NYP).

BELLI, SILVIO (?-1575). *Qvattro Libri Geometrici Di* SILVIO BELLI *Vincentino.* Il Primo del Misurare con la vista. Nel Quale s'insegna, senza travagliar con numeri, à misurar vacilissimamente le distantie, l'altezze, con altri stromenti, de'quali facilmente si puo prouedere, con le Figure. - - - (6), 132 pp., Venice, 1595 (UM).

Other editions : 1st., Venice, 1565; ib., 1566; ib., 1569 (DES); ib., 1570; and ib., 1573 (DES).

BEUTEL, TOBIAS (fl. 1675). - - - *Geometrischer Lust-Garten,* Darinnen die edle und höchst-nützliche schöne Kunst Geometria aus dem Euclide gepflantzt, - -. 7th. ed., (23), 499, (3), 311 pp., Leipzig, 1729 (UM).

Other editions : 1st., Leipzig, 1660; 2nd., ib., 1668; 3d., ib., 1672; 4th., ib., 1685; 8th., ib., 1737 (UM).

BILLINGSLEY, HENRY (d. 1606). *The elements of geometrie of the most auncient philosopher* EUCLIDE *of Megara.* Faithfully (now first) translated into the Englishe toung by H. BILLINGSLEY - - - With a - - - præface made by M. I. DEE, - - -. 1st. ed., 28 p. l., 457 ff., London, 1570 (UM).

This is the first English translation of EUCLID's Elements.

BILLY, JACQUES DE (1602-1679). *Nova Geometriæ Clavis. Algebra.* 1st. ed., (14), 493 pp., Paris, 1643 (NYP).

BLONDEL, FRANCISCUS (1617 or 1618-1686). *Cours de Mathématique,* qui contient la Mathématique en Général, La Geométrie Spéculative, et la Géométrie Pratique - - -. 2nd. ed., (22), 198, (5), 236 pp., Amsterdam, 1699 (UM).

1st. ed., Paris, 1683 (2 vol.). BLONDEL was a teacher of considerable influence. His work is clearly presented.

BONVICINO, VALERIANO (?-1667). *Matematiche discipline - - - geometria - - -* 1st. (?) ed., (12), 203 pp., Padua, 1665 (DES).

There was another edition, Padua, 1666.

BOULENGER, JEAN (Early 17th cent.) *La Géométrie ou mesure des Lignes droittes estoignées, par le quarre géométrique.* - - -. 1st. ed., (6), 172, (8) pp., Paris, 1623 (UM).

2nd. ed., Paris, 1627 (?).

BOULENGER, JEAN. *La géométrie pratique* (edited by JACQUES OZANAM. New edition.). (8), 423 pp., Paris, 1691 (DES).

Editions : Paris, 1630 (1st.); ib., 1634; ib., 1640; ib., 1690. This work was used during the greater part of the 17th. century.

BOURDIN, P. PIERRE (1595-1653). *Le Cours de Mathématique*, contenant en cent figures une idée générale de toutes les parties de cette Science l'usage de ses instrumens, - - - - -. 3d. ed., 188 pp., Paris, 1661 (UM)

BOURDIN wrote also « *Prima geometriæ elementa* », Paris, 1639; ib., 1640

BOUELLES (also BOVILLUS, BOUVELLES, or BOUILLES), CHARLES DE (1470-1553). *In hoc libro contenta Epitome/ copêndiosaosz introductio in libros Arithmeticos diui Seuerini* BOETII. Adiecto familiari cômêtario dilucidata. - - -. 112, 144 doub. pp. (See SMITH : « Rara Arithmetica », pp. 80, 65 for fuller description.), Paris, 1514 (UM).

1st. ed., Paris, 1507. He wrote also « *Livre singulier et utile, touchant l'art et pratique de géométrie* », Paris, 1511 (1st. ed.); ib., 1542; ib., 1547; ib., 1551; ib., 1555; ib., 1566; ib., 1605; ib., 1608.

BRUNN, LUCAS (Early 17th. cen.). *Euclidis Elementa Practica*, oder Auszzug aller Problematum und Handarbeiten ausz den 15 Büchern EUCLIDIS. - - -. (6), 92 pp., Nürnberg, 1625 (UM).

BUTEONIS, JOAN (also JEAN BORREL), (1459?-1554?). - - - *opera geometrica* - - - - 1st. ed., 158, (2) pp., Leyden, 1554 (UM).

The second edition Leyden, 1559 (UM), contains the same material as the first.

CAPRA, ALESSANDRO (Last half 17th. cen.). *Le due prime parti della geometria famigliare*. Nella seconda si danno le misure geometriche per misurare le fabriche. (20), 162 pp., Cremona, 1673 (DES).

CASATI, PAOLO (1617-1707). *Fabrica et uso del compasso di Proportione*, Doue insegna à gli Artefici il modo di fare in esso le necessarie diuisions, E con varij Problemi vsuali mostra l'utilità di questo Stromento - - -. 2nd. (?) ed., (6), 250 pp., Bologna, 1685 (UM).

What was probably the first edition appeared in Bologna, 1664.

CATANEO, GIROLAMO (Late 16th. cen.). *Dell' arte del misurare libri due* - - -. Brescia, 1584 (DES).

There is another edition, Brescia, 1682 (DES).

CEULEN, LUDOLPH VAN (1539-1610). *De arithmetische en geometrische fondamenten*. Met het gebruyck van dien in veele verscheydene constighe questien, zoo geometrice door linien, als arithmetrice door irrationale ghetallen, oock door den regel Coss, ende de tafelen sinuum ghesolveert. 1st. ed., (3), 271 pp., Leyden, 1615 (UM).

This work is very rare. It was translated into Latin the same year by W. SNELLIUS.

CEVA, GIOVANNI (Latter 17th. cen.). *De lineis rectis se invicem secantibus statica constructio*. Appendix geometrica. 1st. ed., (8), 84 pp., Milan 1678 (DES).

CHALES (or CHALLES), CLAUDE FRANÇOIS MILLIET DE (1621-1678). - - - *Mundus Mathematicus, Tomus Secundus* complectens Geometriam Practicam, - - -. 2nd. ed., (26), 692 pp., 4 vol., Leyden, 1690 (UM).

1st. ed., Leyden, 1674, 3 vol. DE CHALES was an excellent mathematician. His work was widely known and used.

CHALES, CLAUDE FRANÇOIS MILLIET DE. *The Elements of Euclid, explained and demonstrated in a new and most easie method*. With the uses of each proposition in all the parts of mathematicks. 1st. ed., (10), 391, (5) pp., London, 1685 (GAP).

This is a translation by REEVE WILLIAMS. Other editions : 1696 ; Oxford, 1700 3d. ed., (GAP); 1720.

CHAMPENOIS, JACQUES CHAVVET (Late 16th. cen.). *La pratique universelle de geométrie de* JACQUES CHAVVET CHAMPENOIS. 46, 26 ff., Paris, 1585 (DES).

The first 46 double pages are concerned with practical geometry. A knowledge of EUCLID's Elements is presupposed.

CIACCHI, GIUSEPPI (fl. 1675). *Regole generali d'abbaco - - - con un breve trattato di geometria* - - -. 16, 400 pp., Florence, 1675 (DES).

Practical geometry is treated on the last 50 pages.

CLAVIUS, CHRISTOPHORUS (1538-1612). - - - *operum mathematicorum*. Tomus secundus. Complectens geometriam Practicam, Arithmeticam Practicam, Algebram. 230, (14) pp. (Only pp. on geom. given), Mainz, 1611 (CU).

Other editions : 1st., Rome, 1604 (GAP); Mainz 1606.

CLAVIUS, CHRISTOPHORUS. *Euclidis Elementorum Libri XV*. (126), 671 pp., Frankfurt, 1607 (UM).

The first edition appeared in Rome, 1574.

COMMANDINO, FEDERIGO (1509-1575). *Euclidis Elementorum libri sex*. - - - (12), 265 pp., Naples, 1679 (GAP).

1st. ed., Naples, 1625 (?). There were many other editions, revisions and translations extending into the 18th century.

CONNETTE, MICHEL (fl. early 17th. cen.). *La Géométrie réduite en une facile et briefve practique par deux excellens instruments*. - - - composé en italien par MICHEL CONNETTE - - - Traduits en françois par P. G. S., mathématicien. (9), 63 pp., Paris, 1626 (JC).

DIGGES, THOMAS (d. 1599). *A Geometrical practise, named Pantometria*, divided into three Bookes, Longimetra, Planimetra and Stereometria - - -. pp., unnumb., London, 1571 (GAP).

Another edition London, 1591.

DOU, JAN PIETERSZOON (Early 17th. cen.). *De Ses Eerste Boecken Euclidis*, van de beginselen ende fondamenten der geometrie - - -. 1st. ed., (12), 224 pp., Amsterdam, 1626 (GAP).

This is the first translation of EUCLID into Dutch. Another edition appeared, Amsterdam, 1701.

ERRARD, JEAN (Early 17th. cen.). *Les Neof Premiers Livres des Éléments d'Euclide* - - -. 90 ff., Paris, 1605 (DES).

Another edition, Paris, 1629.

ERRARD, JEAN. *La géométrie et pratique générale d'icelle*. 4th. ed., 212, 176 pp., Paris, 1620 (CU).

Other editions : 1st., Paris, 1594; 2nd., ib., 1602; 3d., ib., 1619.

FELICIANO DA LAZISIO, FRANCESCO. *Libro di Arithmetica e Geometria speculativa e practicale* - - -. (158) pp., Venice, 1563 (UM).

Other editions : Venice, 1526 (colophon 1527 (CU); ib., 1536 (CU); ib., 1545 ; ib., 1550 ; ib., 1560 (CU) ; ib., 1561 ; Verona, 1563 ; Venice, 1570 ; Verona, 1602 ; Padua, 1629 (DES) ; Venice 1669 (UM); and others as late as 1692.

FINÆUS, ORONTIUS (1494-1555). ORONTIJ FINÆI DELPHINATIS, regii mathematicorum Lutetiæ professoris, in sex *priores libros geometricorum* - - - -. (4), 112 ff., Paris 1551 (DES).

Other editions : 1543, 1544, 1556 and 1586. FINÆUS was the first professor of mathematics in the University of Paris.

FINÆUS, ORONTIUS. *Opere* di ORONTIO FINEO DEL DELFINATO : Diuise in cinque Parti; Arithmetica, Geometria, - - -. (13), 82, 85, 126, 88, 19, ff. Venice, 1587 (UM).

There were other editions up to 1670.

FORESTANI, LORENZO (?-1623). *Pratica d'arithmetica, e geometria, nuovamente posta in luce*. (10),345 ff., Venice, 1603 (DES).

This is a very rare edition. It contains 85 double pages of practical geometry. Another edition, Siena, 1682 (DES).

GAUTRUCHE, PIERRE (1602-1681). PETRI GALTRUCHII aurelianensis soc. Jesu *Mathematicæ Totius* - - -. (6), 304, (4) pp., Cambridge, 1668 (UM).

Other editions : Vienna, 1661; ib., 1665; ib., 1675; ib., 1683.

GLORIOSUS, JOANNES CAMILLUS (1572-1643). *Exercitationum Mathematicarum*. Decas prima. In qua continentur varia & theoremata & problemata, tum ei ad soluendum proposita, tum ab eo inter legendum animaduersa. 108 pp., Naples, 1627 (DES).

There was another edition, « decas tertia », Naples, 1639.

GOODEN, JAMES (1670-1730). *Trigonometria Plana et Sphærica cum Selectis ex Geometria et Astronomia Problematis*. - - -. 1st. ed., 167 pp., Liége, 1704 (UM).

GRAAF ABRAHAM DE (fl. 1650). *Inleyding tot de Wiskunst*; Of de Beginselen van de Geometria en Algebra - - -. 2nd ed., (4), 375 pp., Amsterdam, 1706 (UM).

GRUBER, JOHANN SEBASTIAN ( ) Neue und Gründliche Mathematische Friedens- und Kriegs-Schule/ worinnen der Kern und die nothwendigsten Stücke der Sechs Nachfolgenden Wissenschaften/ Als : Geometriæ Theoreticæ et Practicæ, der Erdmess Kunst - - -. 2nd. ed., (10), 738 pp., Nürnberg, 1702 (UM).

1st. ed., Nürnberg, 1697.

GUARINI, CAMILLO GUARINO (1624-1683). *Modo di misurare le fabriche*, 208 pp., Torino, 1674 (DES).

GUARINI wrote also « *Euclides adauctus et methodicus* », Torino, 1671 and 1676.

HAVEMANN, MICHAEL (1597-1672). *Geometria compendiose Adornata*. 1st. ed., (6), 47 pp., Frankfurt, 1650 (NYP).

HERIGONE, PIERRE (fl. 1640). *Cursus mathematicus*, - - -. 1st. ed., (72), 983, (21) pp., Paris, 1634 (UM).

Other editions : Paris, 1637; ib., 1639; ib., 1644.

HILARIUS, GEORGIUS (1586?- 1656). *Progymnasmatum Mathematicorum Enchiridion* - - -. (6), 88, (168) pp., Copenhagen, 1656 (UM).

HOFMANN, HEINRICH (1576-1652). Teutscher Euclides, Das ist : Geometrische Beschreibung und zwar Fürnemlich Von derselben Elementen. (6), 160 pp., Jena, 1653 (UM).

HULSIUS, LEVIN H. (d. 1605). *Erster* (-Vierdter) *Tractat der mechanischen Instrumenten* - - - Planimetria - - -. 1st. ed., (3), 123, 20, 29, 23 pp., Frankfurt, 1604 (UM).

Other editions : Frankfurt, 1605; ib., 1609 (UM); ib., 1615.

IOVIUS, PAULUS ( ). *Problema duplatio trianguli æquilateri independenter ab alijs quam prioribus tribus libris Euclidis*. (6), 20 pp., 1681 (DES).

JUDEIS, CORNELIUS DE (CORNELIS DE JODE) (1568-1600). *De quadrante geometrico libellus*. In quo quidquid ad linearum et superficierum, utpote altitudinum et latitudinum, dimensiones facit lucidissime demonstratur. - - -. (7), 63 pp., Nürnberg, 1594 (UM).

KECKERMANNUS, BARTHOLOMÆUS (1571-1609). *Systema compendiosum Totius Mathematices, hoc est, Geometriæ*, - - -. 607, (6) pp., Hanau, 1621 (UM).

Other editions : Hanau, 1617; Oxford, 1661 (GAP).

LAMY, R. P. BERNARD (1640-1715). *Les Elemens de Géométrie ou de la Mesure du Corps*. - - -. (18), 348, (4) pp., Paris, 1685 (UM).

This was a work of wide influence extending over a long period of time.

Other editions : Paris, 1684; Amsterdam, 1692; Paris, 1704; ib.,1706; ib., 1710; ib., 1731 (UM) ; ib., 1731; ib., 1734 (UM) ; ib., 1758.

LE CLERC, SEBASTIEN (1637-1714). *Pratique de la géométrie, sur le papier et sur le terrain.* 188 pp., Paris, 1682 (DES).

This was one of the most important texts of the 17th. century. Other editions : Paris, 1669 (1st.); ib., 1700; ib., 1716; Rome, 1761; Bern, 1699; Amsterdam 1692 (Latin), (UM); and English translations by Bowles : London, 1670 (GAP) ; ib., 1727 (3d. ed.) ; ib., 1780, (6th. ed.).

LE CLERC, SEBASTIEN. *Traité de Géométrie.* 1st. ed., 229 pp., Paris, 1690 (UM).

This was also a very important work. Other editions : Paris, 1699; ib., 1739 ; translated into Russian, 1709; English, 1748; German, 1756 (NYP); also Latin and Dutch.

LEYBOURN, WILLIAM (1626?-1700?). *Nine Geometricall Exercises,* for Young Sea-men, and others that are studious in Mathematicall Practices : - - -. (8), 192 pp., London, 1669 (UM).

LEYBOURN, WILLIAM. *Cursus Mathematicus.* Mathematical Sciences, in nine books. Comprehending - - - Geometry, Plain Solid - - -. 1st. ed., (14), 904 pp., London, 1690 (UM).

LEYBOURN, WILLIAM. *Mathematical Institutions.* - - -. (10), 366 pp. London, 1704 (UM).

MALOMBRA, GIUSEPPE (Early 17th. cen.). *Della pratica universale del misurare con la vista.* 212 pp., Florence, 1630 (UM).

MAROLOIS, SAMUEL (Early 17th. cen.). *Opera Mathematica* - - -. Geo- , métrie contenant La Théorie et Practique d'icelle, nécessaire à la fortification. - - - Corrigée - - - changé et rédigé - - - par ALBERT GIRARD - - -. 3 vol. in one binding, 53 pp. of Geom., Amsterdam, 1627 (UM).

Other editions : Arnheim, 1616 (1st.); Oppenheim, 1617, Latin and Dutch; Amsterdam, 1618; ib., 1628; ib., 1629 (DES); ib., 1638 German (DES); ib., 1638 Latin; ib., 1647.

MERCATOR, NICHOLAUS (1620-1687). *Euclidis Elementa Geometrica.* 163 pp., London, 1678 (DES).

There was another edition, London, 1666.

METIUS, ADRIAN (1570-1635). *Manuale Arithmeticæ et Geometriæ Practicæ* : - - -. 2nd. ed., (6), 377, (11) pp., Franecker, 1646 (UM).

1st. ed., Amsterdam, 1634.

MOORE, Sir JONAS (1617-1679). *A New Systeme of the Mathematicks:* containing - - - II. Practical Geometry, together with the first Six Books of EUCLID's Elements, as also the eleventh and Twelfth, symbolically demonstrated. - - -. (14), 288, (10), 104, 161 pp., London, 1681 (UM).

MÜLLER, JOHANN ULRICH (Late 17th. cen.). *Geometria Compendiaria Quadripartita.* Das ist : Kurtz-verfasst Theoretisch-Practische Mess-

kunst - - -. 1st. ed., (8), 100, 69, 80, (3) pp., Ulm, 1706 (UM).

NAUDÉ, PHILIPPE (1654-1729). *Grunde der Messkunst* - - -. The only edition, 220 pp., Berlin, 1706 (DES).

OUGHTRED, WILLIAM (1575-1660). - - - *Clavis Mathematicæ* - - -. (10), 151, 46, (3), 10, 41 pp., Oxford, 1652 (UM).

Other editions : Oxford, 1631 (1st.); ib., 1667 (ed. quarta auctior); ib., 1693 (ed. quinta auctior et emendator); ib., 1698 (5th. with new t.-p.). English : London, 1647; ib., 1694; ib. 1702.

PALMA, JOANNES BAPTISTA (d. 1593). JOANNIS BAPTISTÆ PALMÆ Neapolitani *in Geometriam exercitationes*. (14), 116 pp., Naples, 1689 (NYP).

PARDIES, IGNACE GASTON (1636-1673). *Elementa Geometriæ* - - -. (7), 208 pp., Utrecht?, 1711 (UM).

This book was widely used in several countries and over a long period of time. Editions : French : Paris, 1671 (1st.); ib., 1678; La Haye, 1690 (GAP); ib., 1705; Amsterdam, 1724; English : eight editions between 1701 and 1746, all London; Dutch : Amsterdam, 1690 (GAP); Latin : Jena, 1684-5.

PEVERONE, FRANCESCO (Late 16th. cen.). *Due breui e facili trattati, Il primo d'Arithmeticæ l'altro di Geometria* : - - -. 1st. ed., 134 p., Lyons 1558, (UM).

POMODORO, GIOVANNI (Early 17th. cen.). *La geometria prattica*, - - -. 56 ff. unnumb., Rome, 1623 (DES).

Other editions : Rome, 1599 (1st.); ib., 1603 (col. 1599); ib., 1624; ib:, 1667 (DES).

PRÆTORIUS, JOHANNES P. (1537-1616). *Problema, quod jubet ex quatuor restis lineis datis quadrilaterum fieri, quod sit in circulo*. - - - 40 pp. unnumb., Nürnberg, 1598 (DES).

RALPHSON, J. (Late 17th. cen.). *A Mathematical Dictionary* : - - - abridg'd from Monsieur OZANAM, and others. - - -. (4), 40, (78), 26, 18 pp., London, 1702 (UM),

RAMUS, PETER (1515-1572). *Scholarum Mathematicarum libri unus et Triginta*. - - -. (14), 314, (4) pp., Frankfurt, 1627 (UM).

1st. ed. Bâle, 1569; many later ones.

RAMUS, PETER. - - - *Arithmeticæ Libri duo*: Geometriæ septem et viginta. (15), 240, 178, (4) pp., Frankfurt, 1599 (UM).

Other editions : Paris, 1555 (1st.); ib., 1581; London, 1592; many others up to 1636, when WILLIAM BEDVVELL's English translation (UM) appeared.

RECORDE, ROBERT (1510-1558). *The pathwaie to knowledge*, containing the first principles of Geometrie, - - -.2nd. ed., (180) pp., London, 1574 (UM).

RECORDE was the first writer on geometry in the English language.

Other editions : London, 1551 (1st.); London 1662 (containing but two of the original four parts).

ROHAULT, JACQUES (1620-1675). *Œuvres Posthumes de Mr* ROHAULT. Only edition, (34), 777, (2) pp., Paris, 1682 (UM).

This work contains, of EUCLID's Elements, 6 bks., 302pp.; of La Geometrie Pratique, 37 pp.

ROSÆUS, ARGUILLA (fl. 1647). *Hectameron geometricum*; - - -. (8), 68 pp., Leurvarden, 1647 (DES).

RUDD, THOMAS (1584?-1656). *Practical Geometry*, - - -. 1st. ed., (7), 56, (4), 139 pp., London, 1650 (UM).

RUDD, THOMAS. *Euclides Elements of Geometry* : The first VI Books : In a compendious form contracted and Demonstrated. - - - Whereunto is added, The Mathematicall Preface of Mr JOHN DEE. 1st. ed., 253 pp., London 1651 (GAP).

SCHMID, WOLFFGANG (16th. cen.). *Das erste buch der Geometria*. - - -. (6), 127 pp., Nürnberg, 1539 (GAP).

SCHWENTER, DANIEL (1585-1636). M. DANIEL SCHWENTERS *Geometriæ practicæ novæ et auctæ libri IV* - - -. (52), 820 pp., Nürnberg, 1667 (GAP).

1st. ed., Nürnberg, 1618; ib., 1641 (3d. ed.).

STEVIN, SIMON (1548-1620). *Les Œuvres Mathematiques* - - -. 2nd ed., (5), 222, (2), 678 pp., (92 pp. on geometry), Leyden, 1634 (UM).

1st. ed., Leyden, 1608.

STURM, JOHANN CHRISTOPH (1635-1703). *Mathesis compendiaria sive Tyrocinia Mathematica Tabulis Matheseos Generalis* I, Arithmeticis IV, Algebraicis III, Geometricis III, - - -. 69 pp., Leipzig & Coburg, 1707 (UM).

Other editions : Nürnberg, 1670 (1st.); ib., 1684; ib., 1689; ib., 1693 (UM); ib., 1695; ib., 1698; ib., 1703 (UM); ib., 1708; ib., 1709; enlarged and revised by his son, Coburg, 1714(Um); German : Coburg, 1717 (UM); ib., 1719; used as a text in many schools of Germany.

STURM, JOHANN CHRISTOPH. *Mathesis Juvenilis To Mus Prior*, Arithmeticam vulgarem cum Algebra, Geometriam cum Trigonometria, Architecturam Militarem & Civilem cum Mechanica continens. (40), 884 pp., Nürnberg, 1711 (UM).

This work first appeared in two parts, 1699 and 1701 resp.; There are German editions of 1704 and 1705.

TACQUET, ANDREAS (1612-1660). *Opera Mathematica*. (60), 15, (4), 356, (6), 303 pp., Antwerp, 1669 (UM).

TACQUET, ANDREAS. *Elementa geometriæ planæ ac solidæ*, - - -. (14), 368 pp., Amsterdam, 1701 (UM).

Other editions : Antwerp, 1654 (1st.); ib., 1655; Padua, 1694 (9th.

ed.), (NYP); Cambridge, 1703; other editions and translations as late as 1805.

TAYLOR, JOHN (JACOB) (Late 17th. cen.) *Thesaurium Mathematicæ* : or, the Treasury of the Mathematicks. - - - -. (6), 364, (170) pp., London, 1707 (UM).

Other editions : London, 1687 (1st.); ib., 1702; ib., 1722 (4th.).

UNVERZAGT, WOLFFGANG PHILIPP JACOBUS (fl. 1641). *Annus Positionum Mathematicarum Quas defendit ac demonstravit Perill* : Dom. D. WOLFFGANG PHILIPP IACOBUS VNVERZAGT. (112) pp., Louvain, 1641 (UM).

This work contains the program of lectures given on mathematics in the University of Louvain.

VAERMAN, JAN (Early 18th. cen.). *Academia Mathematica of Oeffen-School vande Wis-konst*, verdeelt in Twee Boecken, Den Eersten inhoudende de Geometrie, verdeelt in vier Deelen, als de Beschryving der Figuren, Trigonometrie, Planimetrie en Solidemetrie. - - - (9), 145, 134 pp., Bruges, 1720 (date on preface); (UM).

VAN WESTEN, WYNANT (Middle 17th. cen.). *Mathematische Vermaeklyckheden*. - - -. 6th. ed., (13), 229, (11), 55, (5), 34, (2) pp., Amsterdam, 1673 (UM).

Other editions : Arnheim, 1644 (1st.); ib., 1662 (4th.); ib. 1672-71 (5th.). This work does not contain much pure geometry, but its extensive use throws light on the emphasis in geometry.

VITALI, GIROLAMO (1624-1698). *Lexicon Mathematicum*. - - -. 2nd. ed., (65), 1070 pp., Rome, 1690 (UM).

1st. ed., Rome, 1668.

WELLS, EDWARD (1667-1727). *The Young Gentleman's Arithmetick and Geometry* ; - - -. 2nd ed., (22), 292, (4) pp., London, 1723 (UM).

1st. ed., London, 1713.

WOLFF, CHRISTIAN (1625-1675). *Elementa Matheseos Universæ*. Tomus I. Qui commentationem de methodo mathematica, Arithmeticam, Geometriam - - - complectitur. (22), 864 pp., Magdeburg, 1717 (UM).

1st. ed., Madgeburg, 1713.

ZARAGOÇA, JOSEPH (1627-1676). *Geometria Especulativa, y Pratica de Los Planos, y Solidos*. 1st., ed. (6), 176 pp., Valencia, 1671 (UM).

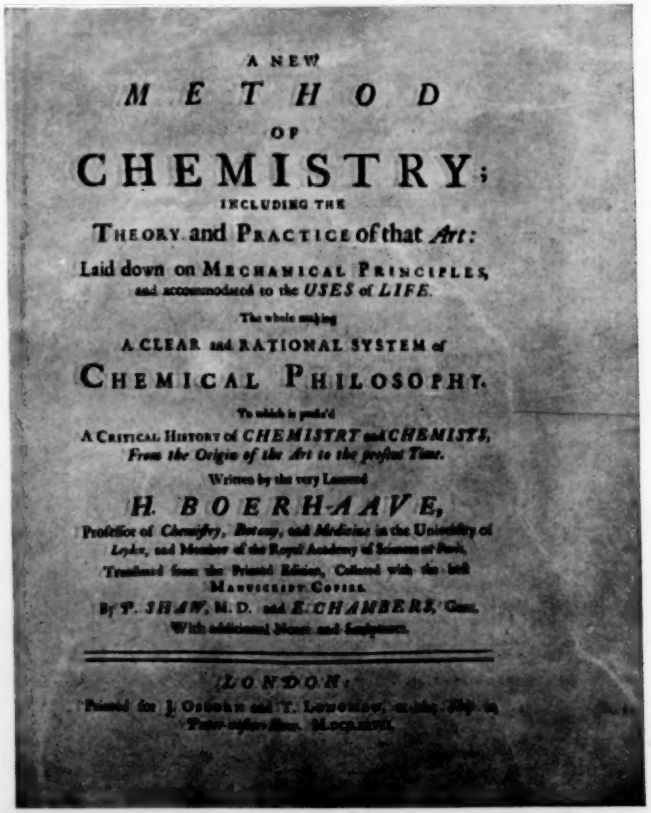
Other works examined, such as those of CASSIODORUS, MENGOLI, MERSENNE, OFFENBACHEN, PATRICI, STAINERO and TAISNIER, have been omitted in this bibliography either because of the small amount of elementary geometry contained or because of their strict adherence to EUCLID.

In round numbers, there are about eighty-five authors listed in the above bibliography. Their works, counting different editions separately,

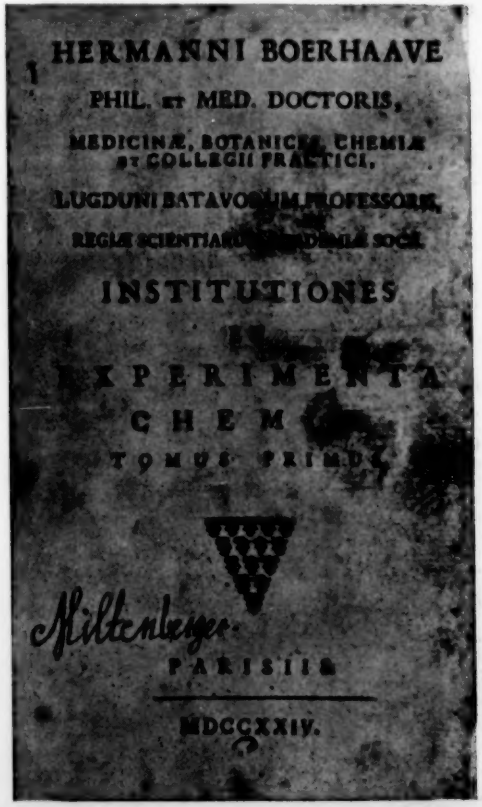
number about 200. Of these, approximately 60 are in the Latin language, 50 are French, 30 are Italian, 25 are German, 20 are English, and 15 are Dutch. About 40 cities shared in the publication of these books, Paris leading with 42. London, Amsterdam, Nürnberg, Frankfurt, Oxford and Rome follow with respectively 21, 17, 16, 9, 6 and 6 publications. Five or less editions were published in each of the other cities.

Approximately 25 works, mostly Latin, published in the last quarter of the sixteenth century, were used extensively after the year 1600, and hence are listed in this bibliography. About 30 treatises are of the first quarter of the seventeenth century. The number of works appearing in the second, third and fourth quarters increases toward the end of the century, there being approximately 40, 45 and 60 respectively.

(University of Florida) F. W. KOKOMOOR.



A NEW
METHOD
OF
CHEMISTRY;
INCLUDING THE
THEORY and PRACTICE of that *Art:*
Laid down on MECHANICAL PRINCIPLES,
and accommodated to the *USES* of *LIFE.*
The whole making
A CLEAR and RATIONAL SYSTEM of
CHEMICAL PHILOSOPHY.
To which is prefix'd
A CRITICAL HISTORY of *CHEMISTRY* and *CHEMISTS,*
From the Origin of the Art to the present Time.
Written by the very Learned
H. BOERHAAVE,
Professor of *Chemistry, Botany,* and *Medicine* in the University of
Leyden, and Member of the Royal Academy of Sciences of *Paris.*
Translated from the Printed Edition, Collated with the last
MANUSCRIPT COPIES.
By *P. SHAW,* M.D. and *E. CHAMBERS,* Gent.
With additional Notes and Supplement.
LONDON:
Printed for J. Osborn and T. Longman, at the Ship in
Paternoster-Row. MDCCXXXI.

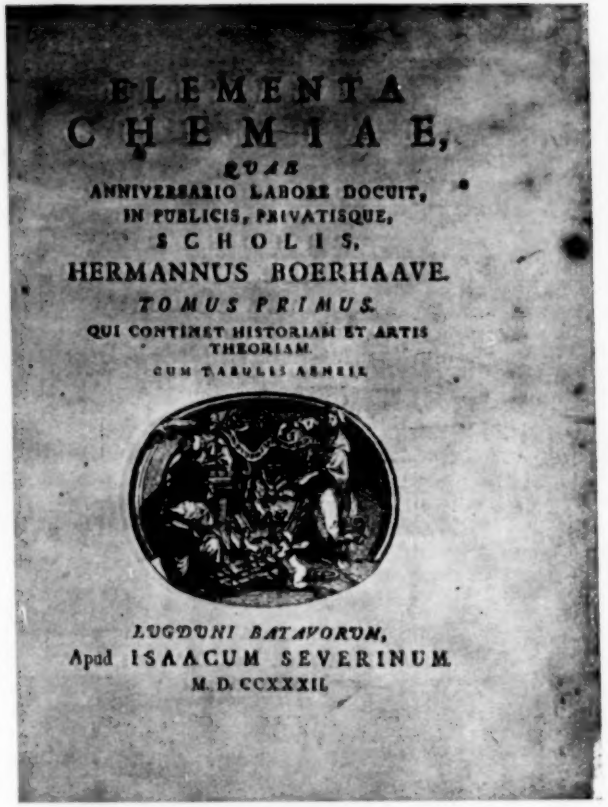


HERMANNI BOERHAAVE
PHIL. ET MED. DOCTORIS,
MEDICINÆ, BOTANICES, CHEMIÆ
ET COLLEGII PRACTICI,
LUGDUNI BATAVORUM PROFESSORIS,
REGIÆ SCIENTIARUM [illegible] SOCII.
INSTITUTIONES
ET
EXPERIMENTA
CHEM
TOMUS PRIMUS.
Miltenberger.
PARISIIS
MDCCXXIV.

Title-pages of the Spurious Edition (9.3 × 15.3 cm.) and of its English translation (19.5 × 23.7 cm.).

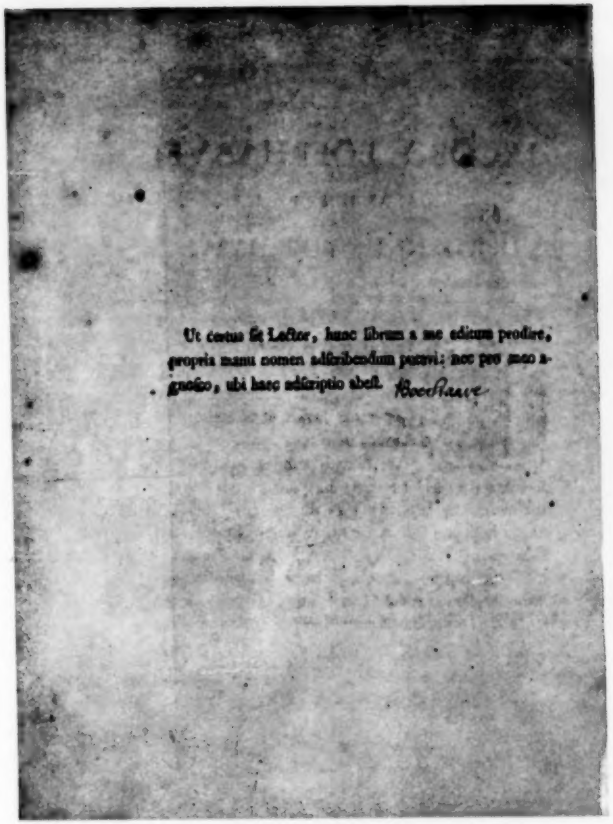
Isis, x, pl. 7

T. L. Davis



ELEMENTA
CHEMIAE,
QUAE
ANNIVERSARIO LABORE DOCUIT,
IN PUBLICIS, PRIVATISQUE,
SCHOLIS,
HERMANNUS BOERHAAVE.
TOMUS PRIMUS.
QUI CONTINET HISTORIAM ET ARTIS
THEORIAM.
CUM TABULIS AENEIS.

LUGDUNI BATAVORUM,
Apud ISAACUM SEVERINUM.
M. D. CCXXXII.



Ut cetus & Lector, hunc librum a me editum prodire,
propria manu nomen adscribendum putavi: nec pro meo ingenio, ubi haec adscriptio abest. Boerhaave

Obverse and Reverse of title-page of First Genuine Edition (19 × 24.2 cm.).

T. L. Davis

The Vicissitudes of Boerhaave's Textbook of Chemistry.

BOERHAAVE's great textbook of chemistry would probably never have been written if the « disgustful task » (*labor ingratissimus*) had not been forced upon its author. His students had collated their lecture notes and had edited a textbook which was published under his name as if it had been his own production. He disowned it entirely, and pointed out that it contained errors on nearly every page — which was gross exaggeration. But the book was very successful ; it was not long before such copies of it as could be had were sold at an advanced price, and a second edition — also without the author's consent — seemed imminent. There can be no doubt that the book was a substantially accurate account of the lectures. BOERHAAVE blamed himself for its faults, and the universal approbation which it received put him in mind of PETRARCH who lamented the decadence of his age which reckoned him among the greatest of its poets. He therefore wrote and published the book as he wished it to be, to correct the faults of the spurious edition, and because he was unwilling to accept the praise which accrued to the inferior and unconsidered publication.

As professor of medicine at Leiden, as professor also of botany and of chemistry, and finally as Rector of the University, BOERHAAVE attracted students from all parts of Europe and made for the University an emminent place in the teaching of the several subjects to which he was devoted. THOMAS THOMSON (M.D. be it noted) calls him (1) « perhaps the most celebrated physician that ever existed, if we except HIPPOCRATES ». In his History of Chemistry he says (2), « It is not our object here to speak of BOERHAAVE as a physician, or as a teacher of medicine, or of

(1) THOMAS THOMSON, History of Chemistry , London, 1830. Vol. 1, page 209.
(2) Same work, page 211-212.

botany ; though in all these capacities he is entitled to the very highest eulogium ; his practice was as unexampled as his success as a teacher. It is solely as a chemist that he claims our attention here. His system of chemistry was undoubtedly the most learned and most luminous treatise on chemistry that the world had yet seen ; it is nothing less than a complete collection of all the chemical facts and processes which were known in BOERHAAVE's time, collected from a thousand different sources, and from writings equally disgusting from their obscurity and their mysticism. Every thing is stated in the plainest way, stripped of all mystery, and chemistry is shown as a science and an art of the first importance, not merely to medicine, but to mankind in general. The real information which it communicates is prodigious, and when we compare it with any other system of chemistry that preceded it, the superiority of BOERHAAVE's information will appear in a very conspicuous point of view. »

The treatise is further remarkable for its tolerant hospitality of mind toward the alchemists (3), for its complete indifference to phlogiston — the word does not appear in the index and the name of STAHL is mentioned only in an incidental manner, for the excellent history of chemistry with which it commences, and for its wise observations on the methodology of chemistry.

After some years as professor of medicine and of botany, BOERHAAVE took on additional duties in 1718, succeeding LE MORT in the professorship of chemistry, and on September 21st. made an oration in which he argued « that chemistry was capable of clearing it self from it's own errors » (4). His private courses in chemistry, given annually for fourteen years, had qualified him to express the opinion, and his public lectures now showed that he was able to accomplish the task.

The spurious *Institutiones et experimenta Chemiae* appeared in 1724, two volumes in 8vo., and contained nothing to show where or by whom it was printed. Although the title page indicates

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(3) *vide* BOERHAAVE's Attitude Toward Achemy, *Medical Life*, 33, 261. (June 1926).

(4) WILLIAM BURTON, An Account of the Life and Writings of HERMAN BOERHAAVE, 2nd. ed., London, 1746. page 37. The first edition was published anonymously in London 1743 (VII + 226 p., portrait).

Paris as the place of publication, BURTON (5) is positive that the book was printed at Leiden. Another edition, two volumes, 8vo., appears to have been published at Venice in 1726 (6).

The treatise commences « Novo decursu, Auditores, Chemiam docere auspicior », etc., after the fashion of a lecture. The Praefatio, printed on the unnumbered page after the title, may be translated as follows :

« Since the most illustrious BOERHAAVE has publicly professed chemistry in the University of Leiden with incredible fervor, the teachings of the great man on this art have been spread by his disciples, and have been collected in writing, and the writings, collated among themselves and edited into one mass, have given origin to various manuscripts. Among them perhaps this exemplar will secure a not inferior place, which, now committed to print, will relieve many from the onerous labor of transcription and will serve at the same time to benefit those strangers to whom the privilege has not been given of imbibing directly the precepts of the great man. And we venture to promise no scanty profit from this book, since this noble art, until now commonly propounded by vague experiments, confined by no certain laws nor bounded by limits, corrupted by inane fables and boasting, has heretofore lacked due order and clearness.

« Those who read through this book will please take note how the most illustrious author has touched in due order upon all that pertains to the whole of physic, how he has digested the processes, how he has given precautions for dangerous operations, how he has prudently determined the strength of chemical products, and how he has condemned severely the frauds of imposters.

« Would that a final revision by the most illustrious author might have produced this work in a polished state. Then it would have been properly freed perhaps from many errors which he could have prevented from creeping in, and would have been enriched with new experiments. Wishing this with a whole heart, enjoy this book in the meantime, and follow in this art in the footsteps of the great leader. »

The Prolegomena consists of an account of the history of chemistry to which is prefixed a short discussion of the nature of chemistry and of the manner in which BOERHAAVE proposes to

(5) Same work, page 148 - « that wretched spurious edition printed from incorrect copies of the Dictata --- at Leyden, under the name of Paris, in two volumes 8 vo. 1724. »

(6) Bulletin III of R. LIER & Co., Firenze, 1926, page 10.

treat the subject. The body of the work is divided into two parts which deal respectively with Principles and with Processes. Contrary to what has been said about it, the book is really an excellent text. The English translation by SHAW (7) and CHAMBERS, London, 1727, one volume in 4to (8), is delightful reading.

The English translators do not include the Praefatio, given above, but use an Advertisement of their own, as follows :

« *Some of the advantages of his work are briefly touch'd upon by the author, in his own preface* (9); *to which we shall forbear making any addition, how strongly soever we may be tempted thereto. We apprehend it safer to be sparing on that point, and rather leave the reader to discover them by their own light, than by an officious zeal forestall his curiosity, or prepossess him with beauties, which may be only such to our selves.*

« *We are, perhaps, too nearly concern'd in the cause, to be admitted to speak of it without suspicion : for tho' it be only a sort of secondary credit we pretend to from it ; yet there are some circumstances, which, for ought we know, may entitle us to the whole.* « *' Tis no secret, that the learned author has abandon'd this his latest offspring : tho ' it was known he had gone with it many years ; and great preparations were made for the delivery ; yet it at last came forth before its time. The truth is, he could not prevail on himself to let it go : his excessive scrupulousness was not contentet with a* nonum prematur in annum *twice over ; and he had in all probability withheld it half an age longer, had it not arrived at strength and maturity enough to make its escape, it self. It was no sooner in the world, than, with all the disadvantages so irregular a birth had occasioned, it found its admirers : unlick'd, uncompos'd, unswaddled as it was,* rudis indigestaque moles, *yet there every where appear'd the sensible traces of an exquisite form, which nothing could overpower or efface.*

« *This mov'd us to take the unhappy fugitive under our care ; and supply, in some measure, the wanted office of the natural parent. What we have done for it, let others say ; the most transient view of its former, compared with its present, state, will easily shew it. In short, we adjusted and composed*

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(7) PETER SHAW, M. D., translator and editor of the *Philosophical Works* of ROBERT BOYLE and of FRANCIS BACON, of *New Experiments and Observations upon Mineral Waters* by FREDERICK HOFFMAN, and of *Philosophical Principles of Universal Chemistry* by Dr GEORGE ERNST STAHL, author of *A* new *Practice of Physic* « formed on the model of Dr SYDENHAM », of *Three Essays in Artificial Philosophy or Universal Chemistry*, and of *Chemical Lectures publickly read at London, in the Year* 1731 *and* 1732 *and since at Scarborough in* 1733 ; *for the Improvement of Arts, Trades, and Natural Philosophy.*

(8) One volume in two parts with separate pagination.

(9) That is, in the Prolegomena of the spurious edition.

its dislocated parts ; pared off the redundant ones ; dress'd it a-new ; nay and adorn'd and enrich'd it ; with a concern and affection rarely shewn to the productions of other people.

« *If any misconstrue our intentions herein ; and charge us with a crime in attempting to rescue a valuable work, just ready to be sacrificed to the cruel delicacy of its author ; and making an offering of it to the public, which was in danger of being defrauded of its due ; we have nothing to reply, but that we* — count their censure praise.

« *This does but put us on a footing with some of the greatest and most deserving persons of many ages, who are on record for the same crime : if their names were rehearsed,* BOERHAAVE *himself would be found of the number.* »

SHAW and CHAMBERS divide the Prolegomena of the spurious Latin edition into two portions. The first, which appears to be the first lecture of the course, or the first part of the first lecture, they call The Author's Preface and set apart from the second and longer portion, which they call Prolegomena, Or The History of Chemistry, by printing a table of contents between the two. The Author's Preface commences as follows :

« What we are now entring upon, is a *Body of Chemistry* ; deliver'd in clear terms ; founded on sure Principles ; and rais'd with undeniable experiments : In the course whereof, will abundantly appear the vast extent and importance of the art ; and the great share it has, not only in medicine, but in all the parts of natural philosophy, and the mechanic arts. To accomplish this the more distinctly, and fully, we divide the whole into three parts, *Historical*, *Theoretical*, and *Practical*. »

Concerning the second of the three parts into which the course is divided, BOERHAAVE says :

« We shall lay down the *axioms*, or assumptions of chemistry ; *i.e.* all the general truths which the particular experiments of chemists have hitherto demonstrated. These are what we assume, or take for granted ; and the whole body of such universal truths, collected from all the particular ones, makes what we call the *Theory of Chemistry*.

« For chemistry is no science form'd *à priori* ; 'tis no production of the human mind, framed by reasoning and deduction : It took its rise from a number of experiments casually made, without any expectation of what follow'd ; and was only reduced into an art or system, by collecting and comparing the effects of such unpremeditated experiments, and observing the uniform tendency thereof. So far, then, as a number of

experiments agree to establish any undoubted truth ; so far they may be consider'd as constituting the theory of chemistry.

« Now, such doctrine or theory is necessary to be premised to every art ; and something equivalent hereto, is practised by every artizan : To instruct his disciples how to proceed orderly to the exercise of their art, he must lay them down the general truths or rules thereof. The truths of chemistry are none of 'em deduced *à priori*, from any abstract contemplations of the mind ; but collected *à posteriori*, from innumerable experiments. And such truths may be consider'd, either as universal phaenomena, or canons of chemistry, or as combinations or systems of the particular truths collected, and digested therein. »

Concerning his method of teaching the processes and practice of chemistry, BOERHAAVE says :

« We shall exhibit a course of chemical *operations*, or the actual changes producible in bodies, by attending to the laws, or axioms of the art. This part we have been conversant in now upwards of twenty years ; and from the first, have found it necessary to go in a *new method*, differing very widely from what has been observ'd by the most celebrated chemists of *Europe* in their courses, and lectures. All these authors we have been at the pains of reading over ; and have every where found 'em as abrupt, and disorderly, as they are scanty and defective : a tumultuary mass of pharmaceutical processes, without any certain design or coherence, is all they afford. The best of 'em is Monsieur LEMERY, whose performance has gone thro' I don't know how many editions, in various languages ; and yet nothing could be worse concerted for such as study the art : He begins with the very hardest part, metals ; a great number of his processes are merely calculated for the preparing of remedies ; and his view, throughout the whole, is rather to furnish the shops with medicines, than to instruct his readers in the knowledge of chemistry. But how hard and unjust is this on poor chemistry. To make an art a drudge to physic, which, in reality, is the principal part of all philosophy.

« The processes of chemistry, ' tis true, are almost infinite ; and it were impossible to exhibit all that the chemists have hitherto invented, in the course of a man's life.

« The method we pursue, then, is to reduce all the most useful, and instructive ones, to certain classes ; to begin with the most simple, and easy of these ; and lay them down in such a manner, as to serve for a basis to the next ; and those, in their turn, to others ; till we arrive at the most difficult, and complicated processes, by an easy, and gradual ascent : the second operation being never required to the understanding of the first ; nor the third to the second ; but the first always necessary

to the second, and that again to the third : so that there will be no occasion for ever repeating the same operation. Two hundred processes, conducted after this manner, will set all the fundamentals of the art to view ; and a few canons, or general rules, subjoin'd to each process, will open the way for all the other numberless processes to be perform'd : So that at the same time that our reader has only the marrow of the art presented him, he is really put in possession of the whole bulk thereof.

« In each process our Method shall be, 1., To exhibit the object. 2. To explain the operation. 3., To shew the effects of the change therein. The genuine virtues, and medicinal properties of each production shall be added ; such, as we have approv'd them by abundant experience : And these we promise to describe in the most severe, and scrupulous manner ; far from any taint of the wild flights, and extravagancies usual among the chemists. »

The program thus laid down in the Prolegomena of the spurious edition is also followed in BOERHAAVE's genuine textbook of chemistry, the *Elementa Chemiae* which was published at Leiden in 1732, two volumes in 4to., and makes his work, whether in the spurious or in the genuine version, deserving of all the praise which THOMSON and others have bestowed upon it. Indeed it is difficult to say which version is the better textbook. The *Elementa Chemiae* is more formal and contains some information which does not appear in the *Institutiones et Experimenta Chemiae*, and it shows the author's personality less clearly. The spurious edition contains such repetitions and circumlocutions as a professor would inevitably make in addressing a class, and has many anecdotes, etc., which are omitted from the *Elementa Chemiae*, which serve to illustrate a point but have the greather advantage that they stimulate the interest of the student. It is plain that BOERHAAVE sometimes said in his lectures things which he did not wish to repeat in the print of well-considered publication. Perhaps the *Elementa Chemiae* is the better textbook for study, but it probably had no advantage over the *Institutiones* as a means of securing proselytes to chemistry.

BOERHAAVE's reaction to the spurious publication is apparent in the fact that he *wrote* his signature on the reverse of the title-page of every copy of the first edition of the *Elementa Chemiae*, in order that the reader might be certain that the work was really his own.

The dedicatory letter to his brother, JACOBUS (or JAMES, as the English translators have it) commences with a reference to

the circumstance that the writing of the book was forced upon him — « As I could not avoid publishing the Work which I now address to you, I have been obliged in my old Age to review the Labours of my Youth. » (10) It tells how he and his brother spent whole days and nights « succesively together in the chemical Examination of Natural Bodies». At that time his brother's thoughts were turned principally toward physic and his own toward divinity. « But Providence ordered otherwise » ; his brother became the clergyman and he the physician. He says to his brother, « Who, therefore, has an equal Right to this Work with yourself, to whom it in some measure owes its being what it is ? Accept it, therefore, I entreat you, with the same kind Resentments, with which I offer it ; and let it stand as a publick Token of a grateful Acknowledgment, and a lasting Memorial of Fraternal Affection. Adieu, and whilst you are now and then amusing yourself with Things of this Nature, don't forget those joint-labours we were formerly so agreeabley engaged in. »

In the Author's Preface to the Reader (*Lecturo Autor*) he says :

« *Nothing was formerly farther from my Thoughts, than that I should ever trouble the World with any thing in Chemistry. There are so many Books already upon this Subject, and many of them wrote so well, that it is hardly possible for me, either to represent things in a better Light, or to offer any thing that has not been said before. My Academical Office however made it necessary, that I should annually give a Course of Lectures in this Art ; but this was with no other View, than just to lay down the Rudiments of it, and give some Examples of the Operations, for the sake of those Gentlemen, who were pleased to put themselves under my Tuition. This, therefore, I endeavoured to the best of my Abilities ; and having done this, I thought I had discharged my Duty, and that nothing farther could reasonably be expected from me. It has happened, however, very different from what I was aware of : For the Ingratitude of some of my Pupils, the promoting whose Interest was always my Study ; and the insatiable Avarice of some Booksellers, who will not stick at the basest Actions, if they can make any Advantage of them, sufficiently sowered my Chemistry-Professorship. For these Persons, under a false pretence of doing a service to Learning, published, without my Knowledge, a Course of Chemical Institutions and Experiments, and prefixed my Name to it ; and thus did an Injury both to the Publick and me in a manner certainly very dishonourable, and that*

(10) Here, and in the quotations immediatly following, I use the English translation of TIMOTHY DALLOWE, London, 1735.

ought to be taken notice of by the Laws. The false Notions, Absurdities and Barbarisms, that are imputed to me in every Page of that Work, are so abominable, that they will not bear mentioning. It happened, however, to the Misfortune of the present Age, of which by this means they have left an instance to the succeeding, that this sorry Book met with too many Buyers, very much to the Loss and Disgrace both of them, and the Persons who recommended it. By this means I had the daily Mortification of seeing my Pupils before me with this Book in their Hands, whilst I was giving my Lectures ; and could plainly perceive, that every Word I said must be examined by the Text of that miserable Performance. Quite tired with this, I applied myself for Relief to some Persons in Authority, who had Power to restrain and punish such Enormities as these ; and I had almost gained my point, had not some others designedly delay'd, put off, nay and opposed it too, though I had deserved much better things at their Hands, and had received from them so many fair Promises in my favour, as, I think, would have deceived the most cautious Man living. Thus then I was satisfied by an uncomfortable Experiment, that there are some Persons in the World, who take pleasure in triumphing over Learning, by every method that lies in their Power. These, and other Considerations, determin'd me to give Lectures in Chemistry no longer ; and therefore I immediately resigned my Professorship. But this was no sooner over, than I was again engaged in new Difficulties; for my Friends were all of opinion, that in my own Defence I ought to publish my Chemical Institutions and Experiments myself, that by this Means the World might have an Opportunity of judging in what manner I did in reality teach Chemistry, both in the publick and private Schools. It was to no Purpose for me to object, that these Institutions were designed only for my private Use, and calculated purely for Beginners, to lay before them the first Elements of the History and Method of Chemistry, and of consequence would be of no manner of Service to the Publick. Nay I insisted farther, that as these only laid down the Rudiments of the Chemical Art, and had nothing else to recommend them, they must nessarily be disagreeable to any Reader that was ever so little versed in it. They on the other hand urged, that the spurious Work met with general Approbation, was mightily wanted, grew dearer, and would be very soon reprinted, if I did not take care to prevent it. This I confess gave me some Uneasiness, and brought to my mind the great PETRARCH, *who lamented the Misfortune of his Contemporaries, when he saw them set such a value upon his Works, as to think him worthy to be rank'd among the famous* POETS. *How much more then, thought I, ought I to be ashamed, should I, who am conscious of my own poor Abilities, and am an Admirer of other Authors, dare to intrude myself among the Chemical Writers. Not able, however, to stand out any longer, I at last undertook the disagreeable Task; and I publickly declare, that the Book with which I now trouble the World, was forced*

from me much against my Inclination. But to detain my Reader no longer, please to accept this Performance, such as it is, in a favourable manner ; excuse the Trouble I by this means give you ; and impute the Liberty I take of appearing in Print upon this Subject, to the very good Reception the spurious Copy, which was worse, met with from the Public. »

The first four numbered pages of the book are devoted to a *Propositum* which sets forth the plan of the treatise in about the same manner as did the first part of the Prolegomena of the spurious edition, but sets it forth more formally and not quite so well. This section is entitled *The Design* and *The Design of the Work* by the English translators, DALLOWE and SHAW respectively.

The work was enormously successful and appeared in many editions in Latin, French, German, and English. I have seen or found a record of the following (11): in Latin ; *Elementa Chemiae*, the autographed first edition, Leiden, 1732, 2 vols. 4to. ; another edition of Leiden, 1732 (sumptibus J.R. IMHOF), 2 vols. 4to. (12) ; London, 1732, 2 vols. 4to. (13, 14) ; Paris, 1732 (14); Leipzig, 1732, 2 vols. 8vo. (12, 14) ; Paris, 1733, 2 vols. 4to. (13, 14, 15, 16) ; London, 1735 (?) (17) ; Basle, 1745, 2 vols. sm. 4to. (13, 14) ; Venice, 1745 (14) ; The Hague, 1746, 2 vols. 8vo. (16) ; Venice, 1749, 2 vols. 4to. (12) ; Paris, 1753, (14, 16) ; and Venice, 1759, 2 vols. 4to. (6, 18): in French ; *Abrégé de la théorie chimique, tiré des écrits de* BOERHAAVE, *par* M. DE LA METTRIE, Paris, 1741 (14) ; *Élemens de Chymie*, translated by J.N. S. ALLAMAND, The Hague, 1748, 2 vols. 8vo. (14, 16) ; *ibid.*, Leiden, 1752, 2 vols. 8vo. (14, 16) ; *ibid.*, Amsterdam and Leipzig, 1752, 2 vols. 8vo. with continuous pagination ; and *Elemens de Chymie*, Paris (BRIASSON), 1754, 6 vols.

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(11) When no other reference is given for the books which are mentioned in this article, they are in the library of the writer.

(12) Bulletin XIII of L'Art Ancien S. A., Lugano, 1926, page 81.

(13) Harvard College Library.

(14) Reported by HOEFER, Histoire de la Chimie, 2nd. ed., Paris, 1869. vol. 2, page 368.

(15) Library of the Massachusetts Institute of Technology.

(16) BOLTON, H. C. Select Bibliography of Chemistry, Washington, 1893. pages 321, 322.

(17) HOEFER, *loc. cit.*, reports a Latin edition, « Lond., 1625 », evidently a misprint for 1735, but this is the only reference which I have found to such an edition.

(18) HOEFER, *loc. cit.*, reports this « 1659 ».

12mo. (16, 19) : a German translation, Halberstadt, 1732-1734, 9 vols. 8vo. (14) ; *Anfangsgründe der Chymie*, etc., Berlin (NICOLAI), 1762, 3 Pts. 8vo. (16, 20, 21) ; *ibid.*, 2 nd ed. Berlin, 1791 (16) ; and WIEGLEB's German translation, Berlin, 1782, 8vo. (14).

An English translation (21) is reported to have been published at London (in 8vo.) in the same year that the original Latin edition appeared at Leiden. The next year an abridgement appeared, concerning which BURTON (22) writes as follows — « But to convince the world how much the best things may be misrepresented, especially when hopes are entertained of gratifying malice with profit, the year after BOERHAAVE had himself publish'd his chemistry, there appears a book in 8vo intituled, Dr. BOERHAAVE's *elements of chymistry faithfully abrig'd from the late genuine edition, to which are added curious and useful notes rectifying several opinions*, &c. *of the learned author, by a physician*. The abridger, which is all can be said in his praise, had the modesty to give the first edition without his name ; but it was reprinted in 1737, with the name of EDWARD STROTHER, M.D. with respect to, the errors of the abridger in his own preface, and in some of his translations directly contrary to the sense of the original ; the mutilation of his author's sense by incoherencies ; the injudiciousness in attempting to contract, what was concise in the original, whilst nauseous repetitions of the usual phrases of address to the audience are inserted in ridiculous terms ; the impertinence of, as well as mistakes in, several of the notes ; the barbarity of stile ; the rude and assuming manner of treating one in the esteem of the world so much his superior, and the malevolent disposition to put the worst construction on every thing, whilst many excellencies in the original work, which strike every intelligent peruser, are obscured, suppress, or perverted ; It is hard to say which of these articles gives most disgust to the candid reader, but certainly all of them put together demonstrate this performance to be such, as entitles Dr. STROTHER to the character of an *author* rather than *abridger*, it being more unlike the genuine

(19) N° 26 du « *Bibliophile es Sciences psychiques* », 1926, Emile Nourry, Paris. page 63.

(20) Antiquariatskatalog N^{r} 346, MAYER & MÜLLER, Berlin, 1926, page 2.

(21) Reported by FERGUSON in Bibliotheca Chemica, Glasgow, 1906. vol. I., page 112.

(22) BURTON, *Op. cit.*, pages 146, 147, 148.

work, than that wretched spurious edition printed from incorrect copies of the Dictata eight years before at Leyden, under the name of Paris, in two volumes 8vo. 1724, of which BOERHAAVE complains in his preface ; and much inferior is it to the edition given from that, and additional manuscripts by Dr. SHAW and Mr. CHAMBERS with useful notes in 1727. »

STROTHER's cock-sureness is apparent in his Preface to the Readers (23) (note the plural).

« *The Original of these Sheets being very voluminous, and containing many superfluous Circumlocutions, contributes to raise the Price of the Books and deters the Purchasers from its perusal ; but this Abridgement, I hope, has help'd those Inconveniences, and yet, I can assure you, it contains the whole, except the Author's Dedication, which only gives us to know how his Brother from studying Physick became a Divine, and how the Author from a Student of Divinity took to Physick.*

« *The Author calls his first Volume* The Theory of Chymistry, *imitating* LE FEBVRE ; *but, except his long Detail on* Menstrua, *little of the whole retains to this Art, being a Piece of* Physicks *taken from* DU HAMEL, LE CLERC, *and some others ; and it relates as much to Agriculture or any other Art, as to this.* LEMERY *and* FREIND *join'd do only contain the true Theory of Chymistry, the one accounting in a Physical, and the other in a Mathematical way, for all the* phaenomena *produc'd by Chymistry : Let Physicians, who have enter'd the Lists without a liberal Education, decry this mix'd Reasoning in all the Branches of Physick, till they are adjudg'd Ignorant, and spurn'd for these their vain Attempts : Let this short Answer give them to understand their unpitied Mistake, namely, that wherever* Quantity *or* Motion *are to be accounted for, Mathematicks take place ; but where* Qualities *are the Theme, then Experience back'd by Experiments serve the turn ; and as sometimes All come in play at once, then must our* Rationale *be mix'd : Now as all Diseases do depend on One or more of these, how lame do such Physicians, as are ignorant of either, appear in their Writings! and if they chance to be unskilful in either, as God knows too many really are, what crude and indigested Works do the Shops abound with! I have spoke enough to such as take me, and nothing would be enough for such as don't.*

« *I wish this Treatise had aim'd more at the Correlation between Animal and Chymical Actions ; this is not the only Difference between the Author and me ; I have sufficient Grounds for varying from his Opinions, which I may some other time clear up ; at present I shall only take notice, that*

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(23) I quote from the second edition, London, 1737.

this Abridgement took its rise from Curiosity and a strong desire of seeing how he would appear when stripp'd of his Harangues, which I did at hours free from Business ; the Remarks I have made are fewer than might be, but are too numerous for an Epitome. »

In spite of the many mutilations which it inflicts upon BOERHAAVE's work, the excellencies of the original are not wholly lost, and STROTHER's abridgement is by no means a bad textbook of chemistry. While it lacks inspiration, « it could », as a reviewer of the time might say, « be recommended to an advanced student who might wish to make a review of the subject. »

ELEMENTS OF CHEMISTRY : *Being The Annual Lectures of Herman Boerhaave, M.D. Formerly Professor of Chemistry and Botany, And at present, Professor of Physick in The University of Leyden Translated from the Original Latin, by Timothy Dallowe, M. D.*, London, 1735, 2 vols. 4to. is an excellent translation, and appears to be the work of a former student of BOERHAAVE. The translator says in his preface :

« *As the Reader, in this Translation, may observe several Variations from the Original, it is necessary to inform him that the Alterations are made with the Author's Approbation. I am very sensible that, upon the whole, I shall be challenged for following the Original too minutely : but I was willing rather to err on this hand, than to leave out any thing, that might have a Meaning and Propriety that I was nota ware of. It must be confessed however, that our Author is evidently, in many places, pretty prolix ; nor in reality, considering these as Publick Lectures, could this possibly be avoided : For as we had nothing to depend upon but our Memories, and the short Hints we could take in Writing from the Professor's Mouth, it was necessary for him to dwell longer upon Things, and set them in various Lights, in order to make them appear with more Evidence, and fix them upon the Mind with greater Certainty.* »

A new translation of the *Elementa Chemiae* by PETER SHAW, London, 1741, 2 vols. 4to. (24) was published as the second edition of the *New Method of Chemistry*, but it differs entirely from the first edition of the same title, for that was translated (by SHAW and CHAMBERS) from the surreptitious *Institutiones et Experimenta Chemiae*. Another English translation ,1742 (14), has been reported. A third edition of the *New Method of Chemistry* (trans. SHAW)

(24) Catalogue N° 800 of HENRY SOUTHERAN & Co., London, 1926. page 657.

was published at London, 1753, 2 vols. 4to., and, like the second edition, contains an appendix (by SHAW) « Shewing the Necessity and Utility of Enlarging the Bounds of Chemistry ». A few of the notes appear to be written by SHAW, but most of them consist of extracts, taken with little or no verbal change, from the 1727 translation of the spurious textbook. They contribute spice to the work, and make SHAW's translation more interesting than that of DALLOWE.

We can understand BOERHAAVE's annoyance at the pirating of his lectures. But we can also believe that his great reputation as a teacher of chemistry would have been materially the same if it had had only the spurious *Institutiones* to support it. The *Elementa Chemiae* satisfied his conscience and increased his audience — and the numerous editions of it are the long-repeated echo of his successful teaching.

Cambridge, Massachusetts. TENNEY L. DAVIS.

Notes and Correspondence

I. — The History of Science : Teaching and Personalia.

Edited by HARRY ELMER BARNES (Smith College, Northampton, Mass.).

1. **University of Munich.** — Professor HUGO DINGLER, whose important publications on the philosophy of science have been often reviewed in *Isis* (1), took up his work at the University of Munich in 1912, in the « Methodology, pedagogy and history of mathematical sciences ». His lectures are mainly devoted to elementary mathematics considered from a very advanced point of view ; he also teaches the history, philosophy and pedagogy of mathematical sciences, offers courses on general philosophy, and directs exercises relative to some scientific and philosophical classics. The purpose of his teaching will be best defined by using his own words :

« Eines der Ziele, die ich mir für meine Vorlesungen gesteckt habe, ist, den Studierenden der Mathematik und Physik von den grundlegenden Teilen ihrer Wissenschaft von höheren Gesichtspunkten aus Kenntnis zu geben ; sowie auch, ihnen die geschichtlichen und methodologischen Zusammenhänge aufzuzeigen, die zwischen ihrem Spezialfach und anderen Fachen und den Grundlagen des menschlichen Denkens im Allgemeinen bestehen. Gerade diese Lehrgebiete ermöglichen es dem jungen Lehrer, den Stoff, den er später seinen Schülern vorzutragen hat, von höheren Gesichtspunkten aus zu betrachten und mit solchen zu durchdringen, während lange Zeit (und meist heute noch) in Deutschland der zukünftige Lehrer ausschliesslich in höherer Mathematik ausgebildet wurde und die Gebiete, die er später zu lehren hatte, während seiner theoretischen Ausbildung überhaupt nicht berücksichtigt wurden. »

2. **Entschliessung der 19. Hauptversammlung der Deutschen Gesellschaft für Geschichte der Medizin und der Naturwissenschaften zu Düsseldorf, 21 September 1926.** — Die Deutsche Gesellschaft für Geschichte der Medizin und der Naturwissenschaften hat auf ihrer 19. Tagung zu Düsseldorf die folgende Entschliessung angenommen:

(1) See vol. 4, 385 ; 6, 572 ; 7, 339, 603 ; also Vol. 1, 561, 776; 2, 309; 5, 307; 6, 228 ; 7, 233.

Im Ausland wird die wissenschaftliche Erforschung der Geschichte der Naturwissenschaften von den Regierungen dauernd ideell und materiell unterstützt. In Deutschland ist auf diesem Gebiete leider bisher noch nichts geschehen. Die Deutsche Gesellschaft für Geschichte der Medizin und der Naturwissenschaften fordert daher nachdrücklichst die Gründung eines *Deutschen Forschungsinstituts für Geschichte der Naturwissenschaften*, das den groszen Instituten fur Kunstgeschichte, Musik geschichte, Medizingeschichte usw. an die Seite gestellt werden kann.

Aufgabe dieses Instituts ist es, nicht nur das Quellenmaterial zu sammeln und für naturwissenschaftsgeschichtliche Darstellungen bereitzustellen, sondern auch den Zusammenhang des naturwissenschaftlichen Denkens mit der gesamten Geistesgeschichte herauszuarbeiten.

In den Richtlinien der preuszischen Lehrpläne für den höheren Unterricht wird geschichtliche Durchdringung des naturwissenschaftlichen und mathematischen Unterrichts gefordert. Damit die Fachlehrer die ihnen gestellte didaktische Aufgabe sachgemäsz lösen können, müssen Einrichtungen an den Hochschulen vorhanden sein, die die Ausbildung der künftigen Lehrer in dieser Richtung sicherstellen.

Die Deutsche Gesellschaft für Geschichte der Medizin und der Naturwissenschaften hält es daher für unerläszlich, dasz an den deutschen Hochschulen *Lehraufträge für Geschichte der Naturwissenschaften und der Mathematik* erteilt werden. Die Hauptaufgabe der mit diesen Lehraufträgen beauftragten Fachleute musz es sein, ausser in Vorlesungen vor allem in seminaristischen Übungen die Studierenden mit den Methoden historischer Quellenforschung vertraut zu machen und zu selbständigem Arbeiten anzuleiten.

3. **The Société de l'Histoire de la Pharmacie**, which naturally received a set back during the World War, has taken on a new lease on life. Its membership recently reached the thousand mark. Of its *Bulletin* (*de la Société d'Histoire de la Pharmacie*) Nr. 50 was published April 1926.

The desire for a *Gesellschaft für Geschichte der Pharmacie* frequently expressed in German circles has at last materialized. Organization was effected Aug. 18, 1926, with Dr. LUDWIG WINKLER, Docent for History of Pharmacy at the University of Innsbruck, as President ,and « Apotheker » H. GELDER of Berlin as Secretary. W. ZIMMERMANN of Illenau is « Leiter der Zentralstelle ». E. K.

4. **Chicago Veteran Druggists' Association, Chicago, Illinois.** — About a quarter of a century ago, the *Chicago Veteran Druggists' Association* was organized. Its members meet frequently at a luncheon round table at which the discussion of business, politics and religion is taboo. The human side is the one that is emphasized. Some historical significance

may be attached to the autobiography which each member must contribute to the archives, also to the reminiscences in which the members are supposed to indulge after the luncheon at which their birthday is celebrated by the presentation of a carnation.

Similar organizations have, in recent years, been organized in Milwaukee, New York City, Minneapolis and Philadeplhia.

E. K.

5. **Washington, D. C. Institute for Government Research.** — A study of the history of scientific research and achievement in the United States necessarily involves a considerarion of the scientific activities of the national government. One of the most fruitful sources of information concerning these activities is a series of publications of the Institute for Government Research entitled *Service Monographs of the United States Government*. These monographs, which are written by members of the staff of the Institute deal with the history, organization, and activities of each of the important units of the national government. The history chapter of each of these monographs gives, in considerable detail, an account of the development of the activities which have engaged the attention of the government bureau or office since its beginning, and of the events which have led up to the undertaking, by the government, of each particular line of such work. In the preparation of the history the authors of the monographs have used only original official sources of information, much of which has never before been privately published.

Forty-three of these « Service Monographs » have been issued, among which are monographs on the Geological Survey, the Bureau of Mines, the Weather Bureau, the Public Health Service, the Coast and Geodetic Survey, the Office of the Chief of Engineers, the Patent Office, the Office of Experiment Stations, the Bureau of Standards, the Naval Observatory, the Bureau of Animal Industry, and the Hydrographic Office. Among those in preparation and to be written are monographs on the Bureaus of Plant Industry, Chemistry, Fisheries, Entomology, Soils, and Dairying, the Biological Survey, the Forest Service, and the Smithsonian Institution.

The series, when completed ,will cover all the important governmental units, and will thus include a history of practically all the scientific activities of the national government.

6. **Historical Section, American Chemical Society.** — About five years ago, the *American Chemical Society* organized an *Historical Section*. The fiftieth anniversary of this national body was commemorated early in September in connection with the Sesquicentennial. A jubilee number of the Journal was issued reviewing American chemistry under the following headings :

Part I : Origins and Developments of the American Chemical Society 1876-1926. I. The PRIESTLEY Centennial by SAMUEL A. GOLDSCHMIDT, chairman, Board of Directors, Parsons Ammonia Company, Inc. II. The Organization of the American Chemical Society by WILLIAM H. NICHOLS, Chairman, Board of Directors, Allied Chemical and Dye Corporation. III. The Evolution of the American Chemical Society by FRANK WIGGLESWORTH CLARKE, Chief Chemist, United States Geological Survey. IV. The First General Meeting and the First Local Section of the American Chemical Society, by CHARLES E. MUNROE, Chief Explosive Chemist, United States Bureau of Mines. V. The Activities of the American Chemical Society, by CHARLES L. PARSONS, Secretary, American Chemical Society.

Part II : Reviews of Progress in Various Branches of Chemistry in America. 1876-1926. VI. Mineral Chemistry, by EDGAR F. SMITH, University of Pennsylvania. VII. Physical Chemistry, by WILDER D. BANCROFT, Professor of Physical Chemistry, Cornell University. VIII. Inorganic Chemistry, by JAMES LEWIS HOWE, Professor of Chemistry, Washington and Lee University. IX. Organic Chemistry, by TREAT B. JOHNSON, Professor of Organic Chemistry, Yale University. X. The Chemistry of Physiology and Nutrition, by GRAHAM LUSK, Professor of Physiology, Cornell University Medical College. XI. Agricultural Chemistry, by CHARLES A. BROWNE, Chief, United States Bureau of Chemistry. XII. Industrial Chemistry, by CHARLES E. MUNROE, Professor of Chemistry and Dean, Faculty of Graduate Studies, Emeritus, George Washington University. XIII. Chemical Education, by SAMUEL R. POWERS, Associate Professor of Natural Sciences, Teachers College, Columbia University.

Inasmuch as the impetus to the organization was given at the PRIESTLEY Centennial, it was but fitting that the members should undertake a pilgrimage to Northumberland, Pa., where PRIESTLEY spent the last ten years of his life (*Isis*, III, 342, IV, 152). The story of this decade was told in his inimitable manner by EDGAR FAHS SMITH, Ex-Provost of the University of Pennsylvania, in his *Priestley in America* 1794-1804. (Philadelphia 1920 ; *Isis* IV, 418).

(*University of Wisconsin*). EDWARD KREMERS.

7. **Charles Homer Haskins**, Professor of Medieval History in Harvard University and associate editor of *Isis*, has been elected one of the *associés étrangers* of the Institut de France. G. S.

8. **Johns Hopkins University, Baltimore, Maryland.** — A chair for the history of medicine, the first of its kind in America, has been established at the Johns Hopkins University. Dr. WILLIAM H. WELCH

has been appointed its first incumbent. This is an auspicious beginning.
G. S.

9. **Ramsey Institute of Technology, Saint Paul, Minnesota,** has conferred upon FREDERICK E. BRASCH, treasurer and assistant secretary of the History of Science Society, the degree of Master of Science, in recognition of his noteworthy endeavors in the promotion of astronomical knowledge and his distinguished services to the history of science and the cause of human progress. H. E. B.

10. **University of California, Berkeley, California.** Professor FLORIAN CAJORI writes : « I have given a two hour course on the History of Physics each year for the last six years. I supplement the textbook by lectures, and some are illustrated by lantern slides. In the lectures I emphasize the evolution of physical theories. Courses on the history of mathematics are given regularly, some of them as seminar courses. »
H. E. B.

11. **Northwestern University, Evanston, Illinois.** — Professor HENRY CREW writes in answer to a query by the editor as to the work in the History of Science at Northwestern University : « I fear there is very little to report, outside of a course in the History of Botany, given by Professor C. B. ATWELL, two hours a week during one semester, a course in the History of Chemistry, given by Professor S.C. LANGDON, three hours a week during one semester ; and a joint course which, for many years, was given by Professor LOCY and myself : the first semester was devoted to the History of Physical Science, while the second semester, given by Professor LOCY, was devoted to the History of the Biological sciences. Since Professor LOCY's death this course in the History of Biology has been given by three different men in the department of Zoology. » H. B. E.

12. **Princeton University, Princeton, New Jersey.** — Professor E. G. SPAULDING of the Department of Philosophy presents an elective course for seniors and graduate students on the History of Science, which runs three hours a week during the year. Preceptorials for the purpose of holding informal discussions on the subject are held by Professor SPAULDING and by Professor ROBERT SCOON. The course lays special emphasis on the development of science since the time of COPERNICUS and includes a treatment of the philosophical significance of this development. H. E. B.

13. **University of Wisconsin, Madison, Wisconsin.** — A regular course on the History of Chemistry is presented during one semester by Professor LOUIS KAHLENBERG of the Department of Chemistry. Professor CHAUNCEY LEAKE has added a course on the History of Medicine as an elective for first or second year medical students. H. E. B.

14. **University of Minnesota, Minneapolis, Minnesota.** — Professor JOHN J. FLATHER, head of the department of Mechanical Engineering at the University of Minnesota, died on May 14, 1926, at the age of 63. He had written widely on the subject of the History of Engineering, and was a foundation member of the History of Science Society. At the time of his death he was bringing to completion a general history of engineering science. H. E. B.

15. **Massachusetts Institute of Technology. Cambridge, Massachusetts.** — FORRIS JEWETT MOORE, foundation member of the History of Science Society ,died suddenly on November 20th., 1926, at his home in Cambridge, Massachusetts, in his fifty ninth year. B. A., Amherst, 1889, and Ph. D., Heidelberg, 1893, he was a member of the chemistry department of the Massachusetts Institute of Technology from the autumn of 1894 until the time of his death. He is best known to chemists for his published researches on the sulfo-cinnamic acids, on colored salts of Schiff's bases, on the constitution of xanthogallol, and on the oxidation of uric acid by means of hydrogen peroxide — and to members of the History of Science Society for his *History of Chemistry*, New York 1918. The book is entertainingly written and has done much to promote an historical interest among students of chemistry in the United States. T. L. D.

II. Queries and Answers

Edited by T. L. DAVIS (Mass. Institute of Technology, Cambridge, Mass.)

Q. 8. — Andalò di Negro, Profacius Judaeus, and the Alphonsine Tables.

In his *Système du Monde* PIERRE DUHEM spoke very slightingly of the Genoese astronomer and astrologer ANDALÒ DI NEGRO of the early fourteenth century as « le dernier des ignorants. » (1) One of DUHEM's criticisms of ANDALÒ, however, was none too well taken. In his Canons on the Almanach of PROFACIUS JUDAEUS, ANDALÒ remarks that some « moderns » have reproached PROFACIUS for basing his Almanach upon

(1) DUHEM, *Système du Monde*, IV (1916), p. 270.

the Tables of Toledo, which were compiled so long ago. ANDALÒ, on the contrary, affirms that the Tables of Toledo used by PROFACIUS were the recent tables compiled by order of ALFONSO X, king of Castile, and completed in 1272, only 28 years before PROFACIUS composed his tables for the meridian of Montpellier and the date March 1, 1300 (1301, new style). Consequently there has been very little time for the positions of the planets to alter and error to accumulate. But perhaps, adds ANDALÒ, when these « moderns » speak of the Tables of Toledo, they mean the old ones — that is, the tables of AL ZARKALI drawn up in the eleventh century.

DUHEM thereupon exclaims that the accumulation of mistakes contained in this short passage is astounding, that ANDALÒ does not know the difference between the Tables of Toledo and the Alfonsine Tables ; that he does not know that the Alfonsine Tables use the date 1252 and not 1272 as their point of departure; finally, that he does not know that PROFACIUS in the preamble to his Almanach states that he bases it upon the Tables of Toledo. (2)

But ANDALÒ does not say that the Alfonsine Tables use 1272 as their date of reference ; he says that the correction of them was completed in that year, wherein he agrees with the recent article of WEGENER who holds that the Alfonsine Tables were not drawn up until about 1270, (3) although the opening year of the reign was adopted as their basic year.

In the second place, is DUHEM justified in his assumption that when medieval writers speak of the Tables of Toledo they always mean the tables of ZARKALI and never the Alfonsine Tables, which were also compiled at Toledo and reckoned for its meridian ? ANDALÒ, at least, distinguished between old and new tables of Toledo, the latter those of ALFONSO, the others evidently those of AL ZARKALI. He states that ALFONSO had the Tables of Toledo newly corrected and rectified with much care and attention in the city and tower of Toledo by his astronomers

(2) DUHEM, *op. cit.*, IV, 271.

(3) ALFRED WEGENER, « Die astronomischen Werke ALFONS X », *Bibliotheca Mathematica*, 6 (1905), pp. 129-185. See especially pp. 138 and 176. The compilers of the Alfonsine Tables in their introduction speak of themselves as being in the first decade of the fourth century of the second millennium of the era of Caesar, i. e. 1262-1272 of the Christian era. I find that Dr. J. L. E. DREYER, « On the Original Form of the Alfonsine Tables, » *Monthly Notices of the Royal Astronomical Society*, 80 (Jan. 1920), p. 246, note, has already noted DUHEM's failure to observe this. Dr. DREYER writes : « ANDALÒ DI NEGRO, of Genoa (first half of the fourteenth century), who wrote a number of rather worthless tracts on astronomical matters, says that the tables were finished in 1272. DUHEM, who records this, is not aware of the light thrown on this question by the *Libros del Saber*, but is surprised at ANDALÒ making such a mistake (*Le Système du Monde*, t. IV., p. 266.) »

with many varied instruments over a number of years. This is essentially in agreement with the extant introductory statement made by JEHUDA BEN MOSE and ISAAK IBN SID, the compilers of the Alfonsine Tables. (4) As for PROFACIUS, DUHEM notes (5) that he sharply criticized the Tables of AL ZARKALI in the aforesaid preamble, yet at its close states that he bases his new Almanach upon the Tables of Toledo. DUHEM assumes that by this last expression he means the Tables of AL ZARKALI and that he was totally ignorant of the existence of the Alfonsine Tables, though he writes in the extreme south-west of France close to the Spanish peninsula where they had been in existence for about thirty years at least. But this seems highly improbable, especially since the Alfonsine Tables were the work of the above-mentioned two Jewish astronomers, of whom PROFACIUS, himself a Jew and writing in Hebrew, might surely be expected to know. It therefore seems much more likely that PROFACIUS did not base his Almanach on the Tables of « ISAAC, son of ARZACHEL, of Seville », which he criticized so sharply, and that the « Tables of Toledo », on which he did base his Almanach, were, as ANDALÒ says, the Alfonsine Tables.

It might be supposed that the problem could be best and definitely settled by a detailed astronomical comparison of the Tables in question, namely, those of AL ZARKALI, ALFONSO, PROFACIUS, and ANDALÒ, and that DUHEM would have done this. But I see no statement to that effect by him or other unmistakable evidence that he ever actually compared the tables themselves. There is, of course, the further difficulty that the original Alfonsine Tables of the Castilian version have been lost since an early date, and that they are known only in the altered Latin versions of the fourteenth century. (6)

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(4) *Ibid.*, pp. 174-5.

(5) DUHEM, III, 303-312, wherein he chiefly follows the article of ERNEST RENAN on Jewish scholars and translators of southern France around 1300 in the *Histoire littéraire de la France*, XXVII, 599-623, 1877.

(6) See WEGENER (1905), p. 139, « Das kastilianische Original dieser Alfonsinische Tafeln ging in der Folgezeit verloren und dürfte während der ganzen Zeit, in welcher die Tafeln eine allgemeine praktische Verwendung fanden vollkommen unbekannt gewesen sein. Ihre grosse Verbreitung gewannen sie erst in der lateinischen Bearbeitung des JOHANNES DE SAXONIA, der nach neueren Forschungen zu Beginn des 14. Jahrhunderts blühte. Was indessen zwischen jener ersten spanischen Redaktion und der lateinischen Ausgabe von JOHANNES DE SAXONIA mit den Tafeln geschehen ist, ist gegenwärtig noch in ein undurchdringliches Dunkel gehüllt. Von dem spanischen Original besitzen wir nämlich seit der Herausgabe der *Libros del saber de astronomia* etc. von RICO wenigstens den Text, den RICO bei seinen umfangreichen bibliographischen Arbeiten in inem handschriftlichen Sammelband entdeckte, während allerdings die Tafeln eslbst leider nach wie vor fehlen. Dieser Text genügt aber immerhin, um zu

Another reason for doubting if the Almanach of PROFACIUS was as backward as DUHEM implies is that he appears to have introduced considerable improvements into the astronomical instrument known as the quadrant, and then to have further revised his own work on the subject. (7). Furthermore he is highly praised in ASTRUC's work on the medical faculty of Montpellier for his observation of the angle of the Sun's greatest

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beweisen, dass das Original der Tafeln ganz anders gebaut war als diejenigen des JOHANNES DE SAXONIA, die uns ziemlich rein in den zahlreichen Druckauflagen des 15. und 16. Jahrhunderts vorliegen. » See also at p. 176, « In der Tat unterliegt es keinem Zweifel, dass zur Zeit, wo die lateinischen Ausgaben verbreitet waren, das kastilianische Original völlig unbekannt war. » I am far from sure that WEGENER was right in what he said of JOHN OF SAXONY, but it does not affect the main point that the original Castilian Tables are missing. It is true that Dr. DREYER feels sure that we have essentially the originally form of the Alfonsine Tables preserved in tables drawn up by WILLIAM REEDE and others at Oxford in the first half of the fourteenth century and preserved in various British MSS, but REEDE himself spoke of his tables as considerably altered from the Alfonsine, although based upon them. See J. L. E. DREYER, « On the Original Form of the Alfonsine Tables, » *Monthly Notices of the Royal Astronomical Society*, 80, 243-262, Jan. 1920.

(7) The treatise of ROBERT of ENGLAND on the quadrant, which at first had been called the *Tractatus quadrantis secundum modernos*, now was known as The Treatise on the Old Quadrant (*Tractatus quadrantis veteris*), while the work of PROFACIUS was known as the Treatise on the New Quadrant (*Tractatus quadrantis novi*), as even DUHEM (III, 306-7) has pointed out. PROFACIUS' first version was translated into Latin by ERMENGARD BLASIUS at Montpellier in 1299. See for example at Oxford, MS. Canon. Misc. 340, 14th-16th centuries, fols. 109-21, PROFAÇAS de Marsilia supra quadrantem quem composuit ad inveniendum quicquid per astrolabium inveniri potest, tr. ab Hebreo in Latinum a magistro HERMENGANDO BLASIN secundum vocem eiusdem apud Montem Pesulanum a. incarn. D. 1299. » This is the Oxford MS. from which DUHEM cites at III, 307 without identifying it. There are other Oxford MSS. of the work. PROFACIUS' revision, made in 1301, was soon translated into Latin, for PIERRE DE SAINT-OMER further corrected it, in 1309, a Venetian MS. would seem to indicate. RENAN and DUHEM give no date for this second Latin translation or for PIERRE DE SAINT-OMER's further revision. The usual caption for the former in the MSS seems to be : « Incipit tractatus quadrantis novi compositus a magistro PROFACIO anno domini 1288 et correctus ab eodem an. 1301. » (See MSS Tanner 192, 14th century, fol. 108 ; Oxford, University College, 14th century, fol. 10 ; Paris, BN 7437, 15th century, item 8 ; Florence, Magliabech. XI. 117, 14th century, fols. 171-176). But in a Venetian MS., S. Marco XI. 94, 14th century, this item, which occurs at fols. 32-57, is preceded at fols. 9-32, by « Novus quadrans multum utilis correctus a magistro PETRO DE SANCTO AUDOMARO A. D. 1309, » thus showing that PETER's revision is distinct from the Latin translation of PROFACIUS' own revision. RENAN, repeated by DUHEM, gives a somewhat different title or description for PETER's revision : « Ars et operatio quadrantis editi a magistro PROFACIO Marsiliensi, operis utilitate et factionis facilitate astronomie instrumenta, ut dicit in prologo, excedentis, et postea a PETRO DE SANCTO AUDOMARO Parisius diligiter (sic) correcti et perfecti. »

declination which he found to be 23 degrees, 32 minutes. « This, » says ASTRUC, « served to fix the theory of the earth's movement and of the inclination of its axis, at least from that time on. Moreover, almost all astronomers vied with one another in citing this observation, for instance COPERNICUS, REINHOLDS, CLAVIUS, JUSTINUS. (8) DUHEM, who does not seem to have known of this passage from ASTRUC, refers, however, to the same point. He says : « It does not seem that PROFACIUS has corrected the work of AL ZARKALI and his disciples by any new observation. No doubt he no longer gives to the obliquity of the ecliptic any value other than 23 degrees, 32 minutes, but it does not seem that this evaluation was the result of a direct determination as COPERNICUS seems to have believed ; rather has it been calculated with the aid of the tables based by AL ZARKALI on the theory of access and recess. » (9) But it is difficult to understand why the work of PROFACIUS should be found in so many manuscripts (10), if it did nothing but continue the old tables of AL ZARKALI.

I wonder if some reader of *Isis* can throw any new light upon these matters.

LYNN THORNDIKE.

III. Miscellanea.

1.— The « *Gesellschaft für Geschichte der Pharmazie* » which was organized in 1926, held its first annual meeting in the historic city of Nürnberg May 7 and 8, 1927. It was in this city that one of the first modern official pharmacopoeias the Dispensatorium of VALERIUS CORDUS was published and accepted by the Senate in 1546. Nürnberg is also the home of the Germanic Museum, one of the most interesting units of which is the « Historische Apotheke » with its « Materialkammer » and laboratory.

Although the proceedings of the new society are restricted to the German language in order not to conflict with the interests of the Société de l'Histoire de la Pharmacie and like organizations with which it desires the most friendly relation, membership includes German speaking or reading apothecaries in Austria, Switzerland, the U. S. of N. America,

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(8) JEAN ASTRUC, *Mémoires pour servir à l'histoire de la Faculté de Médecine de Montpellier*, p. 167 *et seq*, Paris, 1767.

(9) DUHEM, III, 311.

(10) For example, at Oxford, Digby MS 114, fol. 37 ; MS 149 ; MS 228 ; Ashmole MS 369, fol. 162 ; MS 360, fol. 84 ; Laud. Misc. MS 594 ; at Paris, BN MS 7286B ; MS 7272 ; MS 7408A ; at Munich, CLM 83 and 275 ; at Vienna MS 2492 ; and see the Index to SCHUM's *Verzeichniss* of the Amplonian MSS at Erfurt.

Holland, Czechoslovakia, Sweden, Hungary, Jugoslavia, Latvia and Esthonia.

The objects of the organization are expressed in the following « Richtlinien » which supplement paragraph 2 of the constitution :

I. Die Gesellschaft sieht in der Pharmazie einen auf wissenschaftlicher Grundlage beruhenden praktischen Beruf im Dienste der Volksgesundheit.

II. Unter Geschichte der Pharmazie versteht die Gesellschaft demnach die Darstellung der historischen Entwicklung dieses Berufs sowohl in seinen wissenschaftlichen, sich innerhalb der Arzneiversorgung auswirkenden Grundlagen, wie auch in allen seinen technischen, gesetzlichen, wirtschaftlichen, ethischen und kulturellen Erscheinungen und Beziehungen.

III. Die Geschichte der grundlegenden, der Hilfs- und Grenzwissenschaften ist nur so weit zu verfolgen, als sie zur praktischen Pharmazie führen oder von ihr ausgehen.

IV. Somit ergeben sich folgende Arbeitsgebiete für die Geschichte der Pharmazie :

1. Das Apothekenwesen. (Geschichte der Apotheken, Schilderung der Entwicklung des Apothekengewerbes in rechtlicher und materieller Hinsicht, der Apothekenbetriebssysteme, der fachpolitischen Strömungen und Reformbewegungen, sowie der Wandlungen innerhalb der wissenschaftlichen Anschauungen.)

2. Pharmazeutische Technik. (Schilderung der gesamten pharmazeutischen Technik einschliesslich aller Hilfsgeraete.)

3. Pharmazeutische Kulturgeschichte. (Schilderung des Apothekerbürgers und seiner sozialen Stellung innerhalb der verschiedenen Zeitalter, der Bedeutung der Apotheken innerhalb der allgemeinen kulturgeschichtlichen Entwicklung, die Beschreibung bemerkenswerter Apothekenbauten und- einrichtungen und schliesslich die Schilderung des Apothekers als Objekt und Subjekt der Literatur und der Kunst.)

4. Pharmazeutisch-Biographisches. (Sammlung kurzer und doch erschöpfender Lebensbeschreibungen aller Maenner und Frauen, die, dem Apothekerstande entstammend, in ihm oder auf anderen Gebieten Hervorragendes geleistet haben.)

E. K.

2. — **Archiv für Geschichte der Naturwissenschaften und der Technik.** — I am glad to announce the revival of this very important journal, the first series of which began in 1908 (*Isis*, 2,154) and ended abruptly in the middle of Vol. 9 in 1922. The new editor is Dr. JULIUS SCHUSTER, Bibliotheksrat an der Preussischen Staatsbibliothek, Vorsitzender der Berliner Gesellschaft für Geschichte der Naturwissenschaft, Medizin und Technik. The publisher remains F. C. W. VOGEL, in Leipzig. All of the articles published in the first series have been included in our *Critical Bibliographies*; it is thus hardly necessary to insist upon the importance of this journal with which our readers are, or ought to be, familiar. It will suffice to recall that the initiative of this publication was due to KARL VON BUCHKA, who died in 1917, of SIEGMUND GÜNTHER, who died in 1923, and of KARL SUDHOFF, who is still, thanks to God, very much alive.

I do not doubt but that the new series will be as useful as the first,

and its contents equally rich and varied. Our every good wish to it.

GEORGE SARTON.

Prix Binoux (1927). — L'Académie des Sciences de Paris vient d'attribuer le prix Binoux pour 1927 à M. HENRI DAUDIN, professeur à la faculté des lettres de Bordeaux pour ses deux ouvrages : De LINNÉ à JUSSIEU, méthode de la classification et idée de série en boatnique et en zoologie (1740-1790), II+264 p., FÉLIX ALCAN, Paris, 1926 ; et : CUVIER et LAMARCK, les classes zoologiques et l'idée de série animale, (1790-1830), 2 vol., XIV+460+338 p., *id.* Le rapport qui attribue le prix estime que ces ouvrages sont « remarquables par la richesse de leur documentation et la profondeur de leur analyse ; ils forment un ensemble de haute valeur, le plus important à coup sûr que l'on ait consacré jusqu'ici à l'histoire des sciences naturelles, il y a plus d'un siècle, et au rôle qu'a joué le Museum dans les événements de cette histoire » (*C. R. Ac. des Sc.*, 185, 1382, 1927). Le compte rendu de ces travaux de DAUDIN paraîtra dans le fasc. 34.

L. G.

Reviews

Charles Thomas-Stanford. — *Early Editions of Euclid's Elements* 64 pp., 13 plates, London, 1926.

This handsome volume, printed by the Oxford University Press, is a publication of the Bibliographical Society, London, and hence may be purchased only by its members. It is number XX in its series of « Illustrated Monographs ».

More than one thousand editions of EUCLID's works have been published and most of those up to thirty years ago were listed by RICCARDI. The present work deals only with EUCLID's Elements of a date not later than 1600. Since the first printed edition of the Elements appeared in 1482, a period of less than 120 years is considered. There are 25 titles of editions of not less than the first six books with demonstrations, etc., in Greek, Greek and Latin, or Latin. Enunciations only are given in Greek and Latin of 8 more editions. Of translations into current European languages, and into Arabic, 13 titles are given but five of these titles are different editions of one work. Then there are 38 numbered titles of fragmentary editions in various languages. In the text all the references to the last five plates are incorrect.

Among the 13 facsimile pages are three of different pages in the first edition of EUCLID's Elements (in Latin), the title page of the first English edition in 1570, and a page from the first Arabic edition which appeared at Rome in 1594. The first translation into any modern European language was into Italian in 1543.

Among the first 46 numbered titles there is not one which RICCARDI did not give, and in the remaining 38 fragments of the elements only 6 were not given by RICCARDI (1). Some of these fragments are of a highly trivial character; for example in no. XVII only the enunciations of book 1 are given; while no. XXVII contains merely the definitions of book 1 and 2.

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(1) THOMAS-STANFORD's remarks regarding RICCARDI, so far as the period he is discussing are concerned, give an entirely erroneous opinion of the Italian bibliographer's notable works of 35 years ago. If he had followed RICCARDI's suggestions more assiduously his work would have been much improved.

While THOMAS-STANFORD's work is interesting, and gives a small amount of new information, most of which is of interest mainly to the bibliographer, it is disappointing in its decided lack of completeness. Details in this connection are contained in the subscribers review in *Science*, 1927.

R. C. A.

Sir Thomas L. Heath. — *The Thirteen Books of* EUCLID's *Elements*. Translated from the text of HEIBERG. With introduction and commentary. 3 vols. Vol. I. Introduction and Books I, II. xii + 432 pp., 1 pl. Vol. II. Books III-IX. 436 pp. Vol. III. Books X-XIII and appendix. Cambridge University Press, 1926 (New York, MACMILLAN).

The fact that a new edition of this monumental, but somewhat forbidding, work has been needed after less than twenty years is a very good omen. Every historian of science will congratulate Sir THOMAS for this great success, one that is thoroughly deserved. Professor HEIBERG of Copenhagen and Sir THOMAS HEATH are undoubtedly the world leaders in the study of ancient mathematics to-day. Thanks to them, our knowledge of EUCLID is based upon a very sound foundation, and the Elements can be read with the same feeling of security as SHAKESPEARE's plays. This is important, because (as was said in the preface of 1908) « It is one of the noblest monuments of antiquity; no mathematician worthy of the name can afford not to know EUCLID, the real EUCLID as distinct from any revised or rewritten versions which will serve for schoolboys or engineers. And, to know EUCLID, it is necessary to know his language, and, so far as it can be traced, the history of the « elements » which he collected in his immortal work. » Sir THOMAS's edition is extremely convenient for this purpose; each proposition, after being very exactly translated from HEIBERG's text, is followed by a brief but pointed commentary setting forth its history and discussing it in the light of earlier and later developments. For the writing of these historical and philosophical notes, the author has taken full advantage of the ancient commentaries, of the Greek-Latin edition of Books I-VI by CAMERER and HAUBER (Berlin, 1824-25), and of the many researches of modern critics who have gradually put the whole subject upon a different plane. Thus, so far as the geometrical Books are concerned, these notes are intended to form a sort of dictionary of the history of elementary geometry, arranged according to subjects ; while the notes on the arithmetical Books VII-IX and on Book X follow the same plan. A general introduction (151 pp.), explains the main facts concerning EUCLID, early commentators, text and scholia, Arabic editions, principal translations and editions, and discusses the nature of the Elements, the meaning

of definitions, postulates and axioms, theorems and problems, the formal divisions of a proposition, etc.

« The present edition has been carefully revised throughout, and a number of passages (sometimes whole pages) have been rewritten, with a view to bringing it up to date ». An example of changed page is p. 21, dealing with HERON. Sir THOMAS concludes, « The net result, then, of the most recent research is to place HERON in the third century A. D. and perhaps little earlier than PAPPUS. HEIBERG accepts this conclusion which may therefore, perhaps, be said to hold the field for the present. » This is a trifle too dogmatic. This dating of HERON's activity is not sufficiently convincing « to hold the field » ; it is plausible, that is all. Much as we admire HEATH and HEIBERG, the fact that they agree on an opinion is not in itself an argument in its favor. With regard to HERON's date, a valuable memoir has been recently published by a distinguished historian, EDMUND HOPPE of Göttingen, who has reached a very different conclusion. According to him, HERON flourished in the second half of the second century B. C. (see *Isis*, 10, 109).

It is worth while to quote in extenso the end of the new preface :

« Since the date of the first edition little has happened in the domain of geometrical teaching which needs to be chronicled. Two distinct movements however call for notice.

« The first is a movement having for its object the mitigation of the difficulties (affecting in different ways students, teachers and examiners) which are found to arise from the multiplicity of the different textbooks and varying systems now in use for the teaching of elementary geometry. These difficulties have evoked a widespread desire among teachers for the establishment of an agreed sequence to be generally adopted in teaching the subject. One proposal to this end has already been made : but the acceptance of an agreed sequence has in the meantime been prejudiced by a second movement which has arisen in other quarters.

« I refer to the movement in favour of reviving, in a modified form, the proposal made by WALLIS in 1663 to replace EUCLID's Parallel-Postulate by a Postulate of Similarity. The form of Postulate now suggested is an assumption that « Given one triangle, there can be constructed, on any arbitrary base, another triangle equiangular with (or similar to) the given triangle. » It may perhaps be held that this assumption has the advantage of not referring, in the statement of it, to the fact that a straight line is of unlimited length ; but, on the other hand, as is well known, SACCHERI showed (1733) that it involves more than is necessary to enable EUCLID's Postulate to be proved. In any case it would seem certain that a scheme based upon the proposed Postulate, if made scientifically sound, must be more difficult than the procedure now generally followed. This being so, and having regard to the facts (1) that the diffe-

rence between the suggested Postulate and that of EUCLID is in effect so slight and (2) that the historic interest of EUCLID's Postulate is so great, I am of opinion that the proposal is very much to be deprecated. »

The new matter added to this edition covers eight pages (Vol. I, 411-18) in the form of two excursuses. The first deals with the very moot, if not insoluble, question of Pythagorean mathematics ; it is a discussion of two papers published by HEINRICH VOGT in *Bibliotheca Mathematica* (Vols. 9 and 10, 1908 and 1910). The second deals with the popular names given to Euclidean propositions : Pons asinorum, Elefuga, Theorem of the Bride, The Bride's Chair, Dulcarnon, Francisci tunica, Goose's Foot and Peacock's Tail. Each volume is followed by a Greek index which will be very useful.

GEORGE SARTON.

Charles Homer Haskins. — *The Renaissance of the Twelfth Century.* XI + 437 p. Harvard University Press, Cambridge, 1927. ($ 5).

It is not so long ago that I published an enthusiastic review of Mr. HASKINS' Studies in the history of mediaeval science (1924 ; see *Isis*, 7, 121-124). I am glad to be able to announce that a second edition of them has recently appeared, containing many additions and corrections (*Isis*, 10, 225). Those studies dealt mainly with the twelfth century and the first half of the thirteenth, a period of considerable significance in Western Christendom, and one which the author has made peculiarly his own. The present work is not meant almost exclusively for erudites as the former was, but will appeal to a much larger public, to the growing mass of educated people who begin to realize that the Middle Ages are worth considering, and that the label « mediaeval » does not represent immutable standards but on the contrary covers such a variety and multiplicity of circumstances and qualities as to become almost meaningless. Indeed if we have nothing to say of a work save that it is a mediaeval, we know as much about it as if we said that it is ancient or modern. The « Renaissance of the Twelfth Century » is an attempt, a very successful one, to give us a comprehensive view of one definite kind of mediaeval civilization : the latin culture of the XIIth century. It is partly a summary of the results obtained by the author in his own patient and fertile investigations, but it is also a synthesis of conclusions reached by other scholars. It is second-hand to that extent, but this does not diminish its value for the following reason. It is absolutely necessary to carry on a certain amount of first-hand research in order to understand what such research means and to recognize it when one meets it again not only along one's own path but along others. The amount of first-hand work which each man can do is, under the best conditions, strictly limited at once by the length of such work and by the brevity of his life. Happily,

intimate acquaintance with research in one field gives one a key to appreciate the quality of genuine research in other fields. It is this very circumstance which makes it at all possible to combine and correlate encyclopaedical knowledge with the deeper but narrower knowledge derived from personal experience. Therefore the present book may be safely used by inexpert readers ; the author is guiding them along many tracks which are not really his own, but he has followed or cut them so often that they have become very familiar to him.

That the twelfth century witnessed a real renaissance in the Latin world is clear enough. « The epoch of the Crusades, of the rise of towns, and of the earliest bureaucratic states of the West, it saw the culmination of Romanesque art and the beginnings of Gothic ; the emergence of the vernacular literatures ; the revival of the Latin classics and of Latin poetry and Roman law ; the recovery of Greek science, with its Arabic additions, and of much of Greek philosophy ; and the origin of the first European universities. The twelfth century left its signature on higher education, on the scholastic philosophy, on European systems of law, on architecture and sculpture, on the liturgical drama, on Latin and vernacular poetry. » The author has not tried to deal with every one of these fundamental aspects but only with a few as indicated in the following list of chapters : 1. The historical background ; 2. Intellectual centres (monasteries, cathedrals, courts, towns, universities) ; 3. Books and libraries ; 4. The revival of the Latin classics ; 5. The Latin language; 6. Latin poetry ; 7. The revival of jurisprudence ; 8. Historical writing; 9. The translators from Greek and Arabic (this is, as we would expect, considering the author's main studies, the longest chapter, 54 pp.) ; 10. The revival of science ; 11. The revival of philosophy ; 12. The beginnings of universities. » Each chapter is followed by a short but select bibliography which increases considerably the practical value of this work, especially for younger readers. The whole book is exceedingly readable and I much enjoyed it. Indeed, there is no greater pleasure to me than to read a work as pleasantly written as this one, and yet as well informed and dependable. Though I am myself very familiar with twelfth-century thought, there was sufficient novelty in every chapter to gratify my curiosity.

By way of illustration, I shall now indicate a few of the points which arrested my attention, trusting that they may prove interesting to other readers. « One very obvious fact in the later eleventh century is the rapid development of trade and commerce, particularly in Italy, and the consequent quickening of urban life in the same region. One is tempted to draw a parallel with the economic and urban antecedents which recent writers have emphasized as explaining the Italian Renaissance of the Quattrocento ; but the renaissance of the twelfth century was not specifi-

cally Italian, indeed it was in some respects most marked beyond the Alps, where economic revival had scarcely begun, so that the movement cannot be explained solely in the terms so dear to economic determinism. » (p. 12.) And speaking of the Carolingian Renaissance (on p. 17), « The movement conserved rather than originated ; yet it reformed the handwriting of Europe by creating that Caroline minuscule which we still use as our alphabet, and its scribes saved to the modern world the Latin classics, nearly all of which have come down to us, directly or indirectly, through Carolingian copies. Libraries had been collected ; humanists had appeared in men like LUPUS OF FERRIÈRES and JOHN THE SCOT. The Latin language never fell back into the depths of the Merovingian age, and the European intelligence never lost the great gains of the ninth century. » The Twelfth Century Renaissance was largely due to internal causes, it was Roman before being Arabic or Greek. But is this not true of every renaissance ? In the case of nations as well as in the case of individuals, the main source of progress and success is internal. However important external stimulations, there must be, first and last a will to take advantage of them, or they can be of no avail. The will itself does not and cannot come from the outside, but only from the inside. Thus in spite of all appearances to the contrary, and however great the borrowings and imitations may be, every true renaissance is essentially original.

Mr. HASKINS shows (p. 368) that the appearance of the earliest universities at the end of the century was a natural development. « In 1100 ' the school followed the teacher, ' by 1200 the teacher followed the school. At the same time these intervening years created a more advanced type of school by the very fact of the revival of learning. At the close of the eleventh century learning was almost entirely confined to the seven liberal arts of the traditional curriculum ; the twelfth century filled out the *trivium* and *quadrivium* with the new logic, the new mathematics, and the new astronomy, while it brought into existence the professional faculties of law, medicine, and theology. Universities had not existed hitherto because there was not enough learning in Western Europe to justify their existence ; they came into being naturally with the expansion of knowledge in this period. The intellectual revolution and the institutional revolution went hand in hand. »

Finally, there is still a paragraph which seems so important to me that I beg leave to quote it almost *in extenso* in spite of its length (p. 361) — And I do so with special alacrity, because it contradicts, or rather qualifies, some of my own conclusions. (1)

(1) In the Introductory chapter of Vol. I of my *Introduction*.

« When BURY speaks of the Middle Ages as a millennium in which reason was enchained, thought was enslaved, and knowledge made no progress, he goes far beyond the facts of the case. What the authors of such statements appear to mean in that conformity to any fixed and authoritative body of doctrine constitutes an intolerable limitation on free thought, and, since mediaeval Europe had such a system, the human reason was in prison. Historically, or pragmatically, formulated, however, the question is not how such restrictions on inquiry would be felt today, but how far they were actually felt in the Middle Ages. Freedom is a relative matter. If men did not consider themselves fettered, they were for practical purposes free, and the fact seems to be that the amount of actual conflict of reason with authority was comparatively small. It was almost wholly confined to philosophy, and was apparently far less than a modern philosopher would expect. For good or ill, mediaeval philosophy was less interested in the foundations of knowledge than in its processes, so that it found no hardship in accepting certain propositions as axiomatic and applying its energy to drawing conclusions therefrom. »... « Freedom of course engenders variety, and here again current impressions are likely to mislead us by giving a false idea of the uniformity of mediaeval thought. Scholasticism was a method rather than a single system of doctrine, and in different hands this method might and did lead to different conclusions. To our distant eyes the differences within scholastic philosophy may often seem minute, but they bulked large in the view of contemporaries, and they were so considerable as to excite and maintain active controversy in every period throughout the age. If these controversies are more acute in the thirteenth and fourteenth centuries, they have their roots in the preceding age, the age which formulated the problem of universals and developed the dialectic method of ABAELARD and his successors. Nothing would have astonished mediaeval philosophers more than to be told that they all thought alike. »

The only serious error which I detected is the following (on p. 312). Speaking of FIBONACCI, the author says : « Mathematics had reached a point from which it was not to make notable advances until the time of DESCARTES ». This is preposterous. But I must share the guilt of this error, as I failed in some unaccountable way to notice it when I read the manuscript of the chapter wherein it occurs.

GEORGE SARTON.

Miguel Asin. — ***Islam and the Divine Comedy.*** Translated and abridged by HAROLD SUNDERLAND, with an introduction by the DUKE OF BERWICK AND ALBA. XXVI + 295 pp. London, MURRAY, 1926.

In 1901, E. BLOCHET wrote a very interesting work, Les sources orientales de la Divine Comédie, wherein he tried to explain the Christian

anticipations of DANTE by Persian influences. As he failed to give any documentary evidence, his work, however suggestive, could not be convincing. It is very strange that he had not tried to detect Muslim influences nearer home, in Spain. As early as 1843, JOURDAIN had shown in his Recherches critiques sur l'origine des traductions latines d'ARISTOTE, that the influence of Byzantium and the Crusades on the transmission of science to Western Christendom had been insignificant as compared with the Spanish influence. The proof of the Muslim origin of the Divine Comedy has been completely given by ASÍN in the present book, which appeared originally eight years ago : La escatologia musulmana en la Divina Comedia (403 p., Madrid, E. MAESTRE, 1919).

His main thesis may be summarized as follows, using his own words (p. 75) : « Six hundred years at least before DANTE ALIGHIERI conceived his marvellous poem, there existed in Islam a religious legend narrating the journey of MAHOMET to the abodes of the after-life. In the course of time from the eighth to the thirteenth centuries of our era — Moslem traditionists, theologians, interpreters of the Scriptures, mystics, philosophers and poets — all united in weaving around the original legend a fabric of religious narrative; at times their stories were amplifications, at others, allegorical adaptations or literary imitations. A comparison with the Divine Comedy of all these versions combined bewrays many points of resemblance, and even of absolute coincidence, in the general architecture and ethical structure of hell and paradise ; in the description of the tortures and rewards ; in the general lines of the dramatic action in the episodes and incidents of the journey; in the allegorical signification ; in the roles assigned to the protagonist and to the minor personages; and, finally, in intrinsic literary value. »

There are three cycles of Muslim traditions (hadîth) concerning the Prophet's journey to the spheres of after-life : the first deals with the isrâ', or nocturnal journey by night on earth; the second, with the mi'râj or ascension to heaven ; the third is a combination of the two former, constituting a complete model of DANTE's visits to Hell, Purgatory and Paradise. The most important of these cycles is the second, one which no one having the slightest contact with Islam could ignore inasmuch as the Mi'râj is the occasion of a great festivity throughout the Muslim world (on the 27th day of Rajab). These traditions were amplified and given metaphysical interpretations by philosophers, especially by the pseudo-Empedoclean and neo-Platonic school founded by IBN MASARRA of Cordova (883-931). The best representative of that school was IBN 'ARABÎ (1165-1240) of Murcia, the greatest ṣûfî not only of Spain but of the whole Arabic world. ASÍN has made a deep analysis of his works and established their many points of resemblance with the works of DANTE. I cannot go here into details, for which I must refer to his masterful study.

BRUNO NARDI had already shown (in 1911-12, then again in 1914) that DANTE's philosophy was not exclusively Aristotelian and Thomist. Otherwise how could one explain the presence in his paradise of SIGER OF BRABANT, the champion of Averroism? Indeed, DANTE was not a Thomist but an eclectic philosopher welcoming information from every source, Christian or Muslim, and weaving them into his own system, if it may be called so, which was a combination of Aristotelism and Muslim neo-Platonism, a sort of intermediate between the philosophy of ST. THOMAS and that of IBN SÎNÂ and IBN RUSHD, although nearer to the latter.

The comparison between DANTE's works on the one hand and the hadîth, and various writings, chiefly those of IBN 'ARABÎ on the other hand, brings out so many points of resemblance that their relationship cannot be denied, even if the transition cannot be completely evidenced. The points of contact between Christianity and Islam were exceedingly numerous in mediaeval Spain. We must not think of the Christian and Muslim communities as isolated each from the other. Not only were there a number of Christian scholars who had some reason or another for knowing Arabic, but there were also large groups of population, assimilated Christians or Mozarabs and assimilated Muslims or Mudejars, which were natural intermediaries through whom the infiltration of cultural elements was steadily taking place. Moreover, in many cases religious enmities were momentarily forgotten because tribal jealousies between Christians (or Muslims) became far more irritating ; the lines of cleavage would then be at least for a time political instead of religious. For example, the national hero of Spain, el Cid Campeador, was almost as much a Muslim in his habits as a Christian, and fought with or against either with equal zest. At the very outset of the IXth century, the hadîth were already known to the Mozarabs of Cordova. They are mentioned by the abbot ESPERAINDEO, by St. EULOGIUS (d. 859), by ALVARO OF CORDOVA (c. 860). It is typical that the Christian prototypes of the Divine Comedy did not appear until after the tenth century, that is, until these Muslim elements had had plenty of time to percolate into Christendom. Leaving aside the regular translators, the early Spanish historians made full use of Arabic sources. PETER PASCHAL had a deep knowledge of Islam ; he visited Rome c. 1288-92 and died in 1322; DANTE visited Rome in 1301. Moreover, DANTE's own teacher, BRUNETTO LATINI, was well acquainted with Muslim literature and customs ; in 1260 he was sent as ambassador of Florence to the court of ALFONSO THE WISE in Toledo and Seville. Muslim influences may have been transmitted to DANTE also by Jews like EMMANUEL BEN SALOMO or HILLEL OF VERONA, by the Catalan Franciscan RAMÓN LULL or the Florentine Dominican RICOLDO DE MONTE CROCE. It should be noted that even as late as the

XIIth and XIIIth centuries the superiority of Muslim culture was acknowledged not only by Spanish scholars but by many others, the greatest of Christendom : ALBERTUS MAGNUS, BACON, LULL. Such acknowledgment helped considerably the diffusion of Muslim ideas except of course the purely religious ones. It is true, the Divine Comedy dealing with the after-life is essentially a religious poem, but Muslim eschatology, as explained for example by AL-GHAZZÂLÎ was hardly different from the Christian ; thus in this particular case, religion instead of being an obstacle, favored the diffusion of those very allegories which inspired DANTE.

Outside of its religious, philosophical and historical elements, the Divine Comedy contains also an unforgettable vision of human love as symbolized by BEATRICE. The meeting of DANTE and BEATRICE, an essential episode of the poem, is foreign to the very spirit of mediaeval Christianity and unprecedented in Christian legend, but it has a striking parallel in Muslim tradition. This tradition culminates in a poem by SHÂKIR IBN MUSLIM of Orihuela (c. 1136), which has many points of resemblance with DANTE's Paradise. What we curiously call Platonic love is not Platonic, but neo-Platonic and Muslim ; the troubadours of Provence and the Italian poets of the *dolce stil nuovo* were influenced, whether they knew it or not, by Arabic models. That is, it is only in Arabic literature (1), for example, in the writings of IBN 'ARABÎ and other sûfîs, that one can trace the preliminary evolution which led to that new poetry and to that new conception of love.

I have said enough to indicate the deep interest of ASÍN's memoir. It is based upon a very thorough study of Arabic and European literature, and the results are explained with admirable clearness and strength. Considerable work remains to be done to evidence the connections between the new literary creations of Europe and their Muslim prototypes, but we may consider the matter proved as far as DANTE is concerned. It would be interesting also to study eschatological writings of other peoples to see how much they may be expected to have in common, when the possibility of any sort of intellectual contagion is excluded. For example, it would be worth while to examine from that point of view the Chinese descriptions of Hell, Purgatory and Paradise composed by the Japanese bonze GENSHIN in the second half of the tenth century (see my *Introduction*, 1, 656).

We must be grateful to the translator, who seems to have done his task very well, and to the DUKE OF ALBA, who patronized the undertaking. As I do not read Spanish easily, I knew this work only in an indirect way, for exai ıple, through GABRIELI's criticism of it (1921; *Isis*, 6, 151),

(1) Or in Persian literature, but this need not be considered here, as its influence upon the West remained negligible until a much later time.

and I must confess that I had underestimated its importance. (I understand that a French translation will be published shortly by PAUL GEUTHNER). In the meanwhile ASÍN's thesis has been considerably discussed ; it is very seldom that a literary study evokes as much criticism as a scientific one, but this has been ASÍN's good fortune, and his views have been debated with almost as much enthusiasm as psychoanalysis or relativity ! I may add that MIGUEL ASÍN Y PALACIOS was born in 1871, that he is a Catholic priest, a disciple of JULIÁN RIBERA Y TARRAGÓ, and professor of Arabic in the University of Madrid. A long list of his writings will be found at the end of his Spanish memoir of 1919 ; others are quoted in *Isis* (6, 198 ; 7, 185); a catalogue of the sources, Arabic and otherwise, and of the main studies devoted to this controversy, is appended to the English translation.

GEORGE SARTON.

A facsimile of the first edition of the Pharmacopoeia Augustana. — With introductory essays by THEODOR HUSEMANN. (Publications of the State Historical Society of Wisconsin, Hollister Pharmaceutical Library, No. 1). Madison, 1927.

The State Historical Society of Wisconsin and Dr. EDWARD KREMERS, director of the course of pharmacy at the University of Wisconsin, deserve to be warmly congratulated for this handsome and learned publication, which I trust is to be the harbinger of many others. The first Western pharmacopoeia to be published was the Nürnberg one, compiled by VALERIUS CORDUS at the age of nineteen and published in 1546 (not 1535.) The date 1535, given by HUSEMANN and reproduced in this volume, seems incorrect. (See C. D. LEAKE in *Isis*, 7, 20). Almost twenty years later, two other pharmacopoeias appeared in Germany, respectively in Augsburg (1564) and Cologne (1565). However, the Augsburg one was far more important than the two others. Five (or six) editions appeared within the century : 1564, 1573, 1574, 1580, 1581 and 1597. The author, ADOLPH OCCO III (thus named to distinguish him from three other Augsburg physicians of the same family, ADOLPH OCCO I, II, and IV), was born in Augsburg in 1524, obtained his M. D. in Ferrara 1549, then returned to his native city to assist ADOLPH II, his father; in 1563, he was appointed city physician and inspector of the Augsburg apothecary shops ; he died in 1606. His conservativeness is well illustrated by his strenuous opposition to the Gregorian calender, which caused him to lose his office. The superiority of his work over that of VALERIUS CORDUS is natural enough ; in the first place, he was able to take advantage of it, then he was older than CORDUS, he had studied in Italy and he could avail himself of the accumulated experience of his family. It is interesting to note that the three rival German works were equally con

servative, — i. e., unaffected by Paracelsian radicalism, — but Occo's pharmacopoeia was by far the most complete, and as such the best representative of orthodox medicine in the second half of the century. Outside of these three rival pharmacopoeias, we ought still to mention a fourth, a small one, printed at Lyon in 1556, being the posthumous work of ANT. STUPPANUS, a physician of Graubuenden who had died in 1551 at Basel. This work was also used by Occo.

This information is derived from the careful studies published by THEODOR HUSEMANN of Goettingen in the *Pharmaceutische Zeitung* (1892, 1899) and here very well translated. A good part of this introduction is naturally devoted to the Augustana itself, a general analysis of it, a comparative examination of its successive editions, and finally the description of three (or four) later editions, considerably enlarged, prepared by RAYMUND MINDERER (d. 1621) : Augsburg 1613, 1622, 1623 and 1629. For all this, and much more, I must refer our readers to the work itself. I shall simply quote the following paragraph, which is particularly instructive :

« Of the 597 Mixta et Composita of the Augustana, almost three-fourths (447) had to be kept on hand. The first edition has no list of Simplicia. The list of the 1573 edition, however, corresponds with insignificant variations... to that of 1580 and also that of 1597, of which LUDWIG has made a compilation. This list enumerates about 230 Stirpes s. Herbae, about 60 Flores, 108 Radices, 51 Fructus, 16 Cortices, 13 Ligna, and 19 Aromata, hence about 400 vegetable drugs. To these should be added 54 Liquores et succi concreti s. Gummi and 36 expressed juices. In accordance with the character of the times, the animal kingdom is very largely represented : 37 fats (23 Pinguedines, 7 Adipes s. Seva, 7 Medullae), 22 Ossa et testae, 7 burnt animals, and 25 other preparations, not including the Grana Chermes enumerated under seeds, and red and white coral enumerated under stones. To the mineral kingdom belong : Simplicia metallica, 56 ; Terrae, 3 ; Lapides, 15 ; Gemmae, 10, a total of 84, not including 15 substances most of which are enumerated as marine products (Simplicia aquis et mari innatantia), but including vegetable camphor and the animal products Spongiae and Margaritae. The entire materia medica therefore is composed of some 500 Simplicia. Adding to this 597 formulas for compounded preparations, we have almost 1100 medicaments. However, this number is relatively small when compared with that of the official and unofficial pharmacopoeias of the seventeenth century resulting from the union of Galenical and chymiatric remedies. »

The facsimile of the first edition, 1564, is very clear and beautiful ; I am as happy to own it as if it were the original. Our readers may find some information on the earliest Western pharmacopoeia (Nurem-

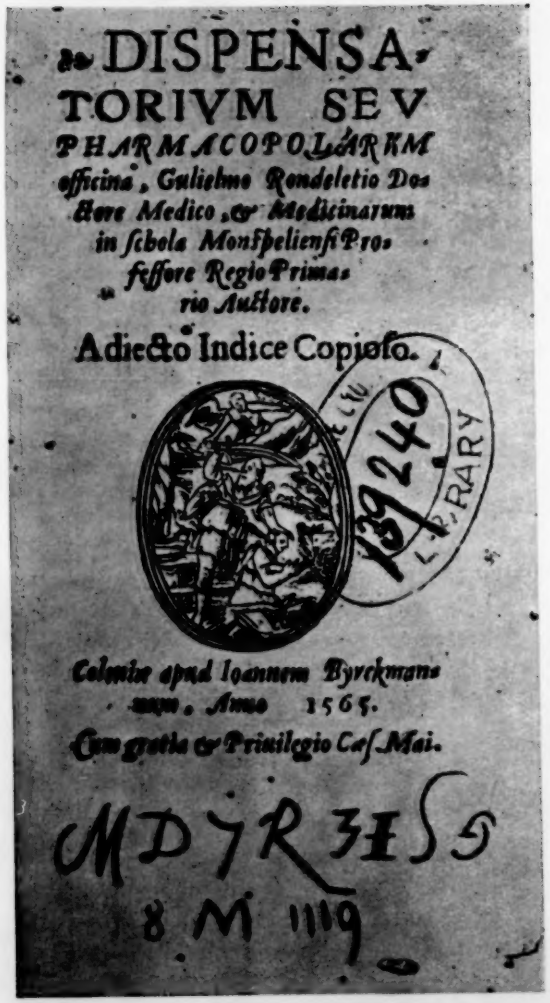


Fig. 3. Fourth Pharmacopoeia
Cologne, 1565

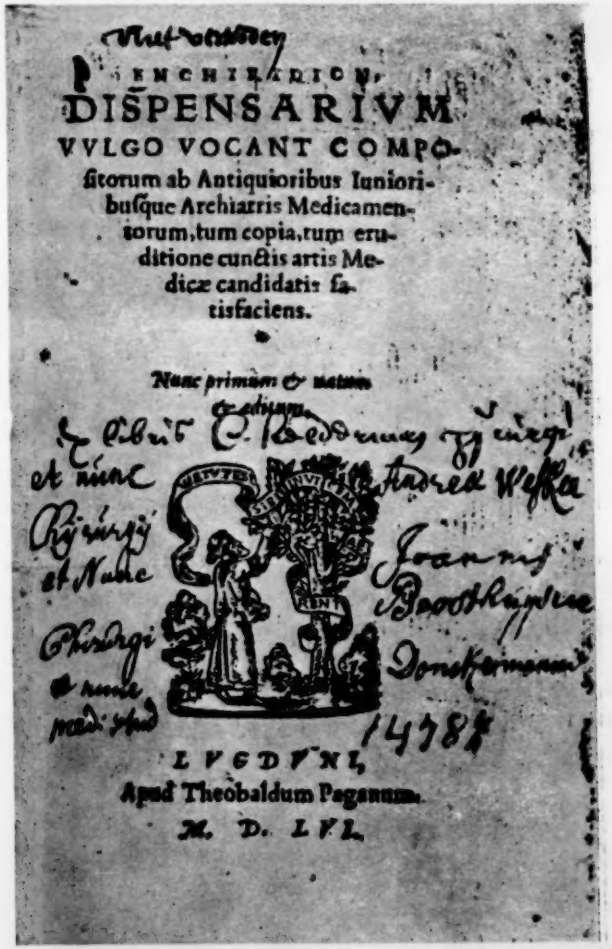
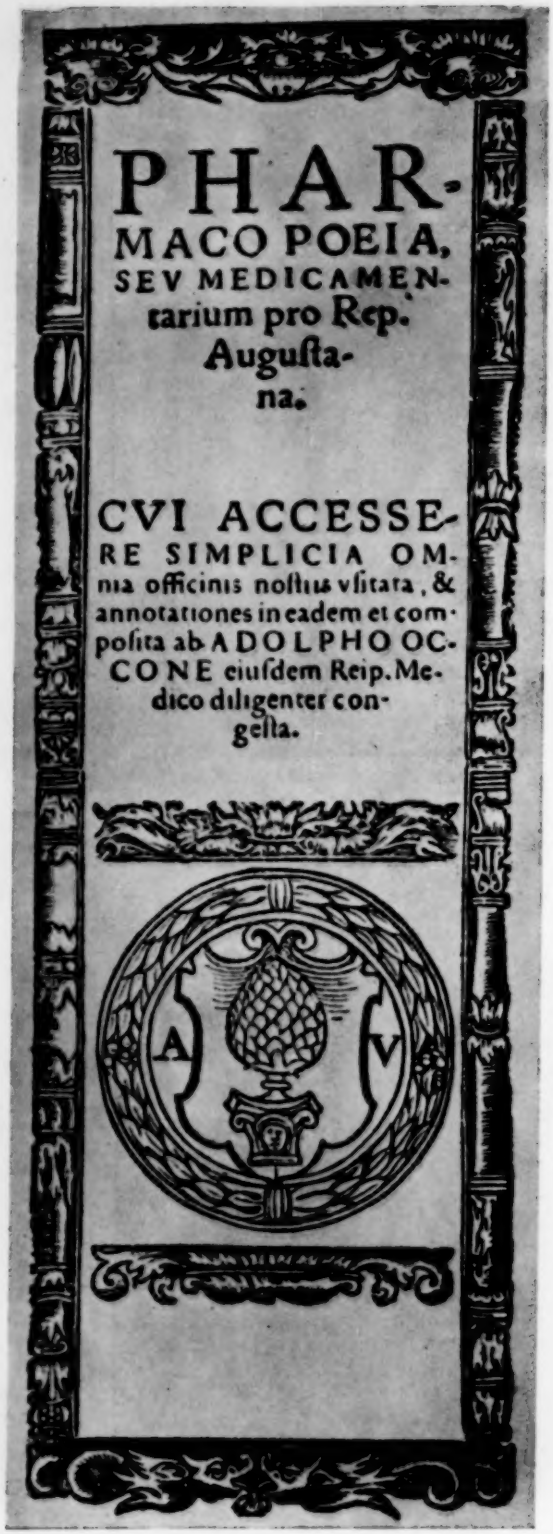


Fig. 1. Second Pharmacopoeia
Lyon, 1556
(For the first, see *Isis*, VII, pl. 3)

Pharmacopoeia Augustana


PHAR-
MACO POEIA,
SEV MEDICAMEN-
tarium pro Rep.
Auguſta-
na.

CVI ACCESSE-
RE SIMPLICIA OM-
nia officinis noſtris vſitata, &
annotationes in eadem et com-
poſita ab ADOLPHO OC-
CONE eiuſdem Reip. Me-
dico diligenter con-
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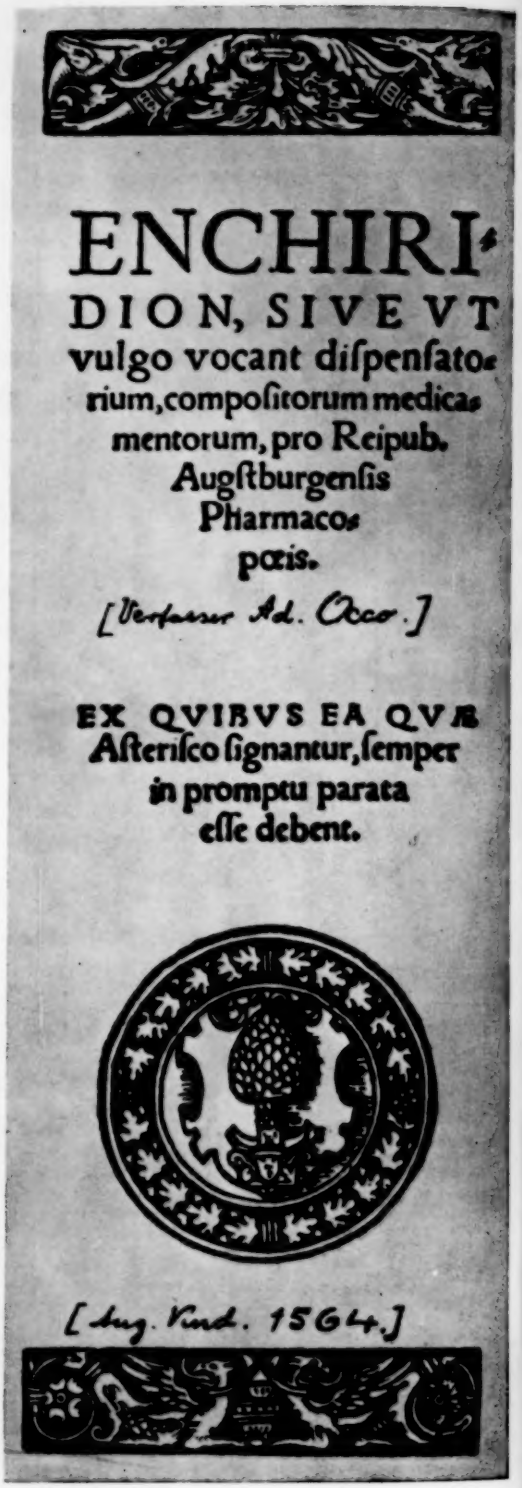
A V

Fig. 2. Third Pharmacopoeia
Augsburg, 1564


ENCHIRI-
DION, SIVE VT
vulgo vocant diſpenſato-
rium, compoſitorum medica-
mentorum, pro Reipub.
Auguſtburgenſis
Pharmaco-
pœis.

[Verfaſſer Ad. Occo.]

EX QVIBVS EA QVÆ
Aſteriſco ſignantur, ſemper
in promptu parata
eſſe debent.

[Aug. Vind. 1564.]

Fig. 4. Fifth Pharmacopoeia
Augsburg, 1573
(First appearance of the word pharmacopoeia in the title)

Pharmacopoeia Augustana

berg, 1546) in CHAUNCEY D. LEAKE's paper on VALERIUS CORDUS and the discovery of ether (*Isis* 7, 14-24 ; title page on pl. 3). To complete this iconographical survey, I now print the title pages : (1) of the second pharmacopoeia, Lyon 1556 ; (2) of the third, Augsburg 1564 ; (3) of the fourth, Cologne 1565 ; (4) of the fifth, Augsburg 1573 (first appearance of the word pharmacopoeia in the title). Figs. 2 and 4 are borrowed from the book under review, figs. 1 and 3 I owe to Col. F. H. GARRISON, of the Surgeon General's Library in Washington, whose courtesy is hereby acknowledged.

GEORGE SARTON.

Boutaric, A. — MARCELLIN BERTHELOT (1827-1907). 220 p., 1 portr. PAYOT, Paris, 1927.

Le centenaire de la naissance de PIERRE EUGÈNE MARCELLIN (1) BERTHELOT (Paris, 1827, 10, 25) donne lieu à des manifestations nombreuses dont la plus tangible sera l'érection, à Paris, d'une maison de la chimie pour laquelle une souscription internationale a été ouverte le 6 mai 1927 — l'idée en avait été émise dès 1921 —, dont on veut faire un centre de ralliement des chimistes de tous les pays, avec bibliothèque, services de documentation, laboratoires. Il est assez naturel que venant en ce moment, un livre consacré à BERTHELOT prenne l'allure d'un hommage. Aussi bien son œuvre scientifique, qui ne comprend pas moins de trente volumes et de quinze cents notes ou mémoires publiés du 27 mai 1850 au 18 février 1907, portant sur les sujets les plus variés de la physique, de la chimie, des sciences de la vie, sur l'histoire de la chimie, s'étendant au domaine de la philosophie, commande-t-elle l'admiration.

De son premier passage au Collège de France comme préparateur de BALARD (1851-9) date sa thèse *Sur les combinaisons de la glycérine avec les acides et sur la synthèse des principes immédiats des graisses des animaux*, publiée en 1854, à une époque où malgré la synthèse de l'acide acétique par KOLBE (1825), de l'urée (WÖHLER, 1828), on croyait encore qu'un abîme séparait le monde minéral du monde organique. Cette synthèse des graisses est le début des travaux de reconstruction que BERTHELOT poursuivit à travers les alcools, les acides, les carbures d'hydrogène. En 1859, il devient professeur à l'école de pharmacie, et c'est là qu'il accomplit ses travaux sur l'acétylène (1862) et les carbures d'hydrogène. Dès 1860, les résultats de ses recherches sont tels qu'il publie sa *Chimie organique fondée sur la synthèse*, où il expose non seulement des faits, mais leurs conséquences philosophiques. En 1863-4, on le charge d'un cours complémentaire de chimie organique au Collège de

(1) Les pièces d'état civil donnent MARCELIN, mais BERTHELOT avait coutume de mettre deux l à sa signature.

Erratum. : ISIS, X, pl. 9. Légendes et clichés se correspondent bien, mais leurs places auraient dû être inversées.

Pl. 10. Les légendes sont à leur place, mais le cliché de droite correspond à fig. 2, celui de gauche à fig. 4.

France ; il y fait ses *Leçons sur les méthodes générales de synthèse en chimie organique* (1864) ; et son succès y est tel qu'à la demande de BALARD, il est nommé l'année suivante professeur titulaire. Il occupera cette chaire jusqu'à la mort (18 mars 1907).

Ses études sur la synthèse, toujours poursuivies, l'avaient orienté vers la thermochimie. Comme il a miné l'idée de force vitale, il va remplacer la notion vague d'affinité par une grandeur mesurable, la quantité de chaleur. De 1859 à 1869, il publie dans les *Annales de chimie et de physique* plus de deux mille pages où sont consignés ses résultats expérimentaux dans ce domaine et ceux de ses collaborateurs : il fait application, en chimie, du principe de la conservation de l'énergie. En 1879, il groupe tous ces résultats dans son *Essai de mécanique chimique fondée sur la thermochimie* (2 vol.). Mais les recherches continuent ; les critiques arrivent aussi, nécessitant de nouvelles déterminations, d'où sortent en 1897, les deux volumes d'un nouvel ouvrage : *Thermochimie, données et lois numériques*.

Et tout cela — c'est une des caractéristiques de BERTHELOT — avec une simplicité expérimentale extraordinaire. Peut-on imaginer un appareil de synthèse plus simple que l' « œuf électrique » où a été réalisée la combinaison directe de l'hydrogène et du carbone sous l'influence de l'étincelle électrique pour donner l'acétylène.

Pour être moins brillantes, ses recherches sur les matières explosives, commencées pendant la guerre de 1870, et poursuivies à la Commission des substances explosives (*Sur la force des matières explosives d'après la thermochimie*, 3e éd., 2 vol., 1883) ses travaux sur la chaleur animale, l'énergétique alimentaire (*Chimie animale : principes chimiques de la production de la chaleur chez les êtres vivants*, 2 vol. 1899), sur la fixation de l'azote atmosphérique par les plantes, par les microbes du sol, sur les fermentations, tous travaux rassemblés en 1899, en 4 volumes, sous le titre : *Station de chimie végétale de Meudon* (1883-1899), *chimie végétale et agricole*, n'en ont pas une importance moindre : la notion d'équilibre, par exemple, à laquelle il arrive dans ses expériences sur l'éthérification et la saponification s'est montrée d'une remarquable fécondité, elle est à la base de la mécanique chimique, à la base de la loi de l'action des masses. Parmi ses travaux chimiques, je citerai encore : *La synthèse chimique*, 8e édit., 1897 ; *Les carbures d'hydrogène*, 3 vol., 1901 ; le *Traité élémentaire de chimie organique*, publié en collaboration avec JUNGFLEISCH, 2 vol., 4e éd., 1904 ; son *Traité pratique de calorimétrie chimique*, 2e éd., 1905 ; un *Traité pratique de l'analyse des gaz*, 1906.

Mais tout cela ne suffisait pas encore à l'activité de BERTHELOT. En 1869, lors de l'inauguration du canal de Suez, il avait visité l'Egypte, vu les poteries, les statues, les émaux, les bijoux trouvés dans les temples et les tombeaux, et réfléchi naturellement sur les connaissances pratiques

de chimie dont ils témoignent. En 1877, la lecture d'un mémoire de K. R. LEPSIUS sur les métaux dans les inscriptions égyptiennes le ramène à cette préoccupation. Et il publie en 1884 ses *Origines de l'alchimie*, bientôt suivies de la *Collection des alchimistes grecs*, texte et traduction avec la collaboration de C. E. RUELLE (quatre fascicules, 1887-88), précédée d'une *Introduction à l'étude de la chimie des Anciens et du Moyen-Age* (publiée ensuite à part en 1889) ; viennent ensuite *La chimie au moyen âge*, 3 vol. 1893 son *Étude sur la révolution chimique, Lavoisier*, 1890, et enfin un volume : *Archéologie et histoire des sciences* (1906), qui groupe la traduction du papyrus chimique de Leyde, celle d'un Ms latin attribué à GEBER, et quelques mémoires épars. Cette partie de l'œuvre de BERTHELOT est trop connue des lecteurs d'*Isis* pour que j'y insiste (voir t. 4, 523 et suiv., 610; 6, 144, 479-99; 7, 493).

Mais BERTHELOT n'avait rien du savant qui vit cantonné dans sa spécialité. Son esprit philosophique se manifestait partout, dans ses livres, dans ses articles de revues, ses discours. Et c'est à ces exposés de ses conceptions de la science, de la morale, de la philosophie, que nous devons quatre volumes : *Science et morale* (1897), *Science et philosophie* (2e éd. 1905), *Science et éducation* (1901), *Science et libre pensée* (1905). Le titre de ce dernier livre indique assez quelle était l'orientation générale de sa philospohie. Il avait en la science une foi profonde, enthousiaste, et la considerait « comme devant être la Bible de l'humanité future. Il ne voyait pas de limite à sa puissance. C'est sur elle qu'il comptait pour réduire de plus en plus le mal et la souffrance ».

Enfin, je ne dois pas omettre son activité politique. Sénateur en 1881, inscrit au groupe politique le plus avancé de cette assemblée, il fut ministre de l'instruction publique quelques mois en 1866-7, et ministre des affaires étrangères en 1895.

Par son amitié avec RENAN qu'il avait connu alors qu'il avait dix huit ans — RENAN en avait vingt deux, et le lien de profonde affection qui s'établit entre eux ne devait être dénoué que par la mort de RENAN (la correspondance avec RENAN a été publié en 1898 : *Renan et Berthelot, Correspondance*) —; par ses relations avec SAINTE-BEUVE, les DE GONCOURT, TAINE, FLAUBERT, THEOPHILE GAUTIER, CLAUDE BERNARD, etc., il a été mêlé à tout le mouvement intellectuel de la seconde moitié du XIXe siècle en France.

Tout autre se serait noyé dans cette activité débordante, qui laissait encore sa belle place aux soins familiaux. Mais BERTHELOT avait une organisation telle, un ordre si parfait, une capacité de travail si considérable une intelligence si étendue, et un enthousiasme tel qu'il faisait face à tout, sans jamais rien oublier, ni de sa vie de chaque jour, ni, dit-il, « du rêve de justice et de vérité qui avait ébloui ma jeunesse ». Un bel exemple à proposer. — Un beau livre que celui de BOUTARIC. L. G.

Wilhelm Ostwald. — *Lebenslinien*. Eine Selbstbiographie. KLASING und Co. G. m. b. H. Berlin. I. Teil : Riga-Dorpat-Riga 1853-1887. VIII + 268 S. 8°. Mit einem Bildnis des Verfassers. 1926. — II. Teil : Leipzig 1887-1905. XI + 445 S. 8°. Mit zwei photographischen Gesamtaufnahmen. 1927.

WILHELM OSTWALD, selbst Bahnbrecher auf dem Gebiete der Psychographie, ist im Begriffe, seine eigene Lebensbeschreibung zu vollenden, und man darf sich vorweg von dem Werke reiche wissenschaftsgeschichtliche Ernte und wertvolle Aufschlüsse zur Psychologie der Forschung erhoffen.

Die beiden bis jetzt erschienenen Bände erfüllen diese Erwartungen in vollem Masze und auch eine mögliche Besorgnis, der psychologische Standpunkt des Verfassers könnte zur Auszerachtlassung gewisser Tatsachen der Erinnerung geführt haben, scheint sich nicht zu bestätigen, wenngleich eine Vervollständigung nach bestimmten Richtungen von groszem Wert sein könnte. Die Darstellung ist durchaus unbefangen und geht auf Kleines wie Groszes je nach der Lebhaftigkeit der Erinnerungsbilder ein. Die Schilderung jener Epoche des plötzlichen Aufblühens der physikalischen Chemie, welche OSTWALD mitschaffend von innen her sah, wird durch die Art, wie er den eigenen Anteil mit der Sachlichkeit des Naturforschers herausarbeitet, und durch die lebendige Darstellung der beteiligten Gelehrtenwelt, zu der er in regen persönlichen Beziehungen stand, zu einer geschichtlichen Quelle ersten Ranges.

Wir erfahren, dasz OSTWALD in Riga als zweiter Sohn eines Böttchers aufwuchs. Die Umgebung war dem Kinde überaus günstig : die Familie bei aller Einfachkeit in erfreulicher wirtschaftlicher Aufwärtsbewegung ; der Vater tatkräftig und wohlwollend und vom Wert der Wissenschaft durchdrungen ; die Mutter, deren Liebling der zarte Knabe war, künstlerisch und literarisch lebhaft interessiert. Selbständig und gelegentlich mit kräftiger geistiger Gegenwehr stellt sich der Knabe zur Umwelt ein. Kennzeichnend ist die erste Kindheitserinnerung : Abwehr des Versuchs eines Hausgenossen, dem am Wasser spielenden Knaben bange zu machen, durch logische Überlegung. Zur Zeit des Konfirmationsunterrichts verliert der Heranwachsende unter dem Eindruck eines eigenen Gedankenexperiments den Gottesglauben. Eine alsbald auftretende Leidenschaft, alles selbst herzustellen, richtet sich besonders auf chemische Stoffe ; die zum Teil gewagten Versuche werden von den Eltern geduldet und oft begünstigt. Die Mittelschule fördert den Knaben, ohne ihn zusehr zu belasten. Der ideale Physiklehrer GOTTHOLD SCHWEDER nützt ihm auszerordentlich und weist ihm u. a. den Weg zur chemischen Literatur, der mit Feuereifer beschritten wird. Die Neigung zur reinen Chemie führt den Achtzehnjährigen an die Universität Dorpat, wo er nach einigem Bummeln seine Leidenschaft für die Forschungs-

arbeit entdeckt und ihr mit dem vollen Einsatz seiner ungewöhnlichen Arbeitskraft folgt. Weit mehr noch als durch die Mittelschule ist er durch die Hochschullehrer vom Glück begünstigt. Der Chemieprofessor KARL SCHMIDT und sein Assistent JOHANN LEMBERG, denen hier schöne Denkmäler gesetzt werden, sind Männer von idealer wissenschaftlicher Gesinnung und mehr als das, sie wandeln in Forschungsbahnen, die von jenen der damaligen vornehmlich organisch-synthetisch gerichteten Hochschulchemie abweichen : sie arbeiten geologisch-chemisch, also anorganisch, und legen groszen Wert auf Gröszen, die bis dahin wenig beachtet wurden, z. B. Massenwirkung und Reaktionsgeschwindigkeit. SCHMIDT weckt des Studenten Interesse fur die Geschichte der Chemie. LEMBERG hauptsächlich begünstigt dessen physikalisch - chemische Forschungsrichtung. Nachdem OSTWALD in eineinhalb Jahren das normale Studium zurückgelegt hat, verbleibt er weiter an der Hochschule und ergänzt zunächst die physikalischen und mathematischen Kenntnisse. Da tritt der erste jener Glücksfälle ein, deren Folgerichtigkeit im Wechsel der Schicksale doch ersichtlich ist : der Jüngling erlangt eine Assistentenstelle bei dem ausgezeichneten Physiker ARTHUR v. Oettingen, es öffnet sich ihm die wissenschaftliche Laufbahn ; im besonderen wird er mit der Thermodynamik vertraut und schon setzt er sich auf einsamen Wanderungen mit dem Zweiten Hauptsatz auseinander. Natürlich zieht ihn die Thermochemie an ; er unterwirft die wichtigen Affinitätsmessungen von JULIUS THOMSEN der Kritik und gelangt durch einen induktiv-deduktiven Gedankengang zu einer experimentell ungleich einfacheren, der « volumchemischen » Methode solcher Messungen. Diese führt er nun für die Säuren nach grosz angelegtem Plan durch und bringt die Methode zu so groszer Genauigkeit, dasz ihm alsbald zur Verwunderung der Fachleute fünfstellige Logarithmen nicht mehr genügen. Die abgelegte Magisterprüfung berechtigt ihn zum Halten von Vorlesungen — ein Anlasz zur Sammlung und Ordnung der gesamten physikalisch-chemischen Literatur. Die « Dozentenabende » der Universitätslehrer bieten reiche Anregung. In diese Zeit fällt die Entdeckung des jungen Forschers durch den englischen Gelehrten PATTISON MUIR (des seitherigen Verfassers einer schönen Geschichte der chemischen Theorien und Gesetze). Im Jahre 1881 wird durch KARL SCHMIDTs warmherzige Förderung der nächste Glücksfall entschieden : die am Polytechnikum in Riga freigewordene ordentliche Professor für Chemie fällt dem noch nicht achtundzwanzigjährigen OSTWALD zu. So wie die innere Entwicklung und die äuszere Laufbahn des jungen Gelehrten bemerkenswert wenige Hemmungen fanden, so bietet sich seinen besonderen Gaben — der groszen Arbeitskraft und experimentellen Geschicklichkeit und der Gewandtheit im sprachlichen Ausdruck ist eine besondere Fähigkeit zur Abstraktion und geistigen Synthese, ferner ein auffallendes Organisationstalent

gesellt — eine Aufgabe von geschichtlicher Grösze dar: die Gestaltung und Verbreitung der neuen Wissenschaft. Der nächste grosze Fortschritt ist die Bekanntschaft mit SVANTE ARRHENIUS' ersten wissenschaftlichen Forschungen. Als OSTWALD, der den Affinitätsmessungen « ungefähr das ganze Leben » zu widmen gedenkt, die gröszeren Leistungen des Schweden auf dem gleichen Gebiet kennen lernt und sich zum vollen Verständnis der nicht einwandfreien Abhandlung durchgerungen hat, schlieszt er sich nach kurzem Schwanken der neuen elektrochemischen Ideenrichtung an, bringt mit der ihm eigenen Gewandtheit im Experimentieren mit einfachsten Mitteln reiches Beweismaterial bei und begründet eine folgenreiche Freundschaft mit ARRHENIUS. Es folgt das Bekanntwerden mit VAN 'T HOFFS epochalen Chemisch-dynamischen Studien und in dramatischer Steigerung die Begründung der *Zeitschrift für physikalische Chemie*, sowie durch eine Verkettung glücklicher Umstände, die Berufung des Vierunddreiszigjährigen an die Leipziger Lehrkanzel für physikalische Chemie, damals die einzige ihrer Art. An dem « Wendepunkt der Wissenschaft », der nun (1887) gekommen ist, fallen OSTWALD hauptsächlich die Aufgaben ihrer geistigen Konsolidierung, ihrer Organisierung und Verbreitung zu. Er vereinigt die drei groszen Gedankenreihen der elektrolytischen Dissoziationstheorie, der Lehre vom osmotischen Druck und der chemischen Thermodynamik zu einem Ganzen und die neue Richtung fördert in den ersten Jahrgängen der Zeitschrift eine grosze Zahl grundlegender Arbeiten zutage. An eigener wissenschaftlicher Ernte ergeben sich hauptsächlich das OSTWALDsche Verdünnungsgesetz und zahlreiche Messungen von Leitfähigkeiten der Säuren im Zusammenhang mit ihrer Konstitution. Durch persönliche Zusammenarbeit vermag der Gelehrte jüngere Fachgenossen bei ihren wichtigen Forschungen entscheidend zu fördern, so zwei seinen ersten Assistenten, WALTER NERNST und ERNST BECKMANN.

Seit den ersten Leipziger Jahren tritt aber OSTWALD auch in eine geistige Entwicklung ein, die ihn zu immer umfassenderen naturwissenschaftlichen Gedankengängen und schlieszlich von der chemischen Lehrtätigkeit weg führen sollte. Es ist die Entwicklung zur *reinen Energetik*. Sie gestaltet sich ihm von physikalisch-chemischen Gedankengängen her besonders in Besprechungen mit den Studenten immer zwingender und veranlaszt den Gelehrten zu einer gänzlichen Neuorientierung der anorganischen Wissenschaften, dann zur Konzeption einer vollständigen *Naturphilosophie* — diesen Namen wieder zu Ehren gebracht zu haben ist eines seiner Verdienste. Mit dichterischem Schwung schildert der Verfasser die Geburtsstunde der Energetik an einem Frühlingsmorgen im Berliner Tiergarten. Und die von einer exakten Schönheit getragene Rede « Die Ueberwindung des wissenschaftlichen Materialismus », durch die er im Jahre 1895 seine Idee in die weite Oeffentlichkeit getragen hat,

atmet noch diesen Geist. Während sich diese neuen Gedankengänge mehr schriftstellerisch auswirken, erschlieszt OSTWALD, von *einem* neuen wissenschaftlichen Lehrsatz ausgehend, der Experimentalforschung ein groszes, überaus wichtiges Gebiet, das der Katalyse, und macht dadurch seit 1896 die Fortsetzung des Massenbetriebs, der in seinem Institut seit Jahren herrscht, mit unverminderter Stärke möglich. Dasz die «Romantiker» unter den Forschern in der Tat, wie OSTWALD später zeigte, gute Lehrer sind, dafür bietet er selbst ein augenfälliges Beispiel. Seine Vorlesungen finden starken Zuspruch ; im Mittelpunkt aber steht das Forschungslaboratorium, seit 1897 in dem unter OSTWALDS Leitung erbauten eigenen Physikalisch-chemischen Institut untergebracht. Die Schilderung der dortigen « wissenschaftlichen Familie » gehört zum Interessantesten, was das Buch bringt ; man bekommt eine lebendige Anschauung von den internationalen Wirkungen einer starken Persönlichkeit und begreift, dasz die dortigen Schüler später OSTWALD immer wieder versichern, diese Zeit sei die glücklichste ihres Lebens gewesen. Die organisatorische Gabe des Lehrers kommt ebensowohl den Arbeitsmethoden, als der Heranbildung von Hilfskräften, den Lehrplänen und Prüfungsordnungen seines Wirkungskreises, dem Bau und der Einrichtung seiner Institute und schlieszlich der notwendig werdenden Abbürdung der Arbeitslast auf tragkräftige jüngere Schultern zugute. Im Jahre 1903 wird die Zahl seiner Schüler, die selbständige wissenschaftliche Leistungen aufweisen, mit 147 ermittelt, wovon 34 als Hochschulprofessoren wirken ; die letztere Zahl steigt später auf etwa das Doppelte.

Noch gröszere Wirkungen wohl als dem Lehrer OSTWALD sind dem Schriftsteller auf chemischem Gebiet (nur von diesem ist zunächst die Rede) beschieden. Er stellt die neuen, von ihm und anderen gefundenen Ergebnisse in Büchern von gröszter Verbreitung dar. Das grosze « Lehrbuch der Allgemeinen Chemie », dessen erste noch in Riga geschriebene Auflage rasch veraltet ist, erfährt in der behandelten Zeit eine zweite (unvollendete) Auflage ; der 1889 erschienene, « Grundrisz der Allgemeinen Chemie » erschien 1909 zum vierten Male ; Die « Wissenschaftlichen Grundlagen der analytischen Chemie », zum gröszten Teil eine geistige Neuschöpfung, ist in zahlreichen Auflagen und Uebersetzungen zu einer Bibel der Analytiker geworden. Lehrbücher der Chemie für Leser verschiedener Vorbildung reformieren die Wissenschaft auf der neuen Grundlage; eine umfangreiche « Elektrochemie, ihre Geschichte und Lehre » bezeugt auch die wissenschaftsgeschichtlichen Neigungen des Verfassers. 1893 erscheint sein « Hand- und Hilfsbuch zur Ausführung physikalisch-chemischer Messungen ». In der *Zeitschrift* obliegt wenngleich VAN 'T HOFF als Herausgeber mitzeichnet, OSTWALD allein die Redaktion, einschlieszlich des Referierens auswärtiger Arbeiten und der Bücherbesprechung. Er benützt das wirksame Sprachrohr als

ein Kämpfer fur seine wissenschaftliche Ueberzeugung, begrüszt lebhaft jeden Fortschritt und bekämpft mit ungewohnter Schärfe Rückständigkeiten und Abwege. Im Verlaufe einiger Jahre erlangt besonders die Lehrbücherliteratur durch Berücksichtigung seiner Forderungen eine höhere wissenschaftliche Stufe.

Zur Geschichte der Chemie trägt OSTWALD auszer durch das elektrochemische Werk noch durch die « Leitlinien der Chemie » bei, neu aufgelegt als « Werdegang einer Wissenschaft », eine kurze Geschichte der chemischen Grundbegriffe; « die Geschichte irgend einer Wissenschaft », sagt der Verfasser, « hat... als Hauptaufgabe die Darstellung der Entwicklung ihrer Begriffe. » Ein ganz groszes Verdienst um die wissenschaftsgeschichtliche Forschung erwirbt sich OSTWALD durch die erfolgreiche und vorbildliche Begründung der Neudrucke bezw. Uebersetzungen « Klassiker der exakten Wissenschaften », von denen über zweihundert Bände erschienen sind.

Eine wichtige Uebersetzungsarbeit gilt noch dem fast unbekannten Werke WILLARD GIBB'S, nach OSTWALD des «gröszten wissenschaftlichen Genius, den die Vereinigten Staaten hervorgebracht haben». Seine thermodynamischen Studien waren jahrelang nur in der deutschen Ausgabe zugänglich. Ähnliche Beispiele gab OSTWALD durch die späte Ehrenrettung WILHELM HITTORFS und die Entdeckung des tschechischen Theoretikers der Chemie FRANZ WALD.

Im Jahre 1900 kündigt der Gelehrte, einem inneren Bedürfnis folgend, Vorlesungen über Naturphilosophie an. Der gröszte Hörsaal der Leipziger Hochschule erweist sich als zu klein und als die Vorlesungen in Buchform erscheinen, werden in Kürze vier Auflagen nötig. Ein ihm his dahin unbekannter amerikanischer Philosoph äuszert spontan begeisterte Anerkennung—allerdings unter Vorbehalt in den beiden philosophischen Grundfragen — : WILLIAM JAMES. Aber es stellen sich auch unerwartete üble Folgen ein : humanistisch gerichtete Kollegen verargen dem Naturforscher sein Vorgehen wie einen unlauteren Wettbewerb. OSTWALD, dem die Förderung anderer begabter Forscher zur zweiten Natur geworden, ist auf solche Sinnesart nicht eingestellt und wird in einer Fakultätssitzung durch explosive Äuszerungen des Unwillens gegen seine Person überrascht. Schnell entschlossen nimmt er seinen Abschied von der Universität und so endet, obwohl er sich damit einen lange gehegten Wunsch erfüllt, der zweite Band dieser sonnigen Lebensgeschichte mit einem Miszklang.

Dieser kurze Abrisz der Laufbahn und der Leistungen des Verfassers kennzeichnen den Inhalt des Werks nur zu einem Teil. Aus der Fülle der stets interessanten und stellenweise humoristischen Darstellung sei noch eine für den Wissenschaftshisoriker besonders wichtige Sache hervorgehoben : die teils im Zusammenhang gegebene, teils verstreute

Gallerie von Zeitgenossen. Auf seinen fruchtbringenden Reisen — von der ersten Studienreise aus Riga nach « Europa » (Deutschland) im Jahre 1882-3 bis zu den beiden Amerikareisen von 1903 und 1904, von welchen besonders die erste, kalifornische, in satten Farben geschildert wird, lernt OSTWALD eine grosze Zahl hervorragender Forscher kennen ; manche von ihnen, sowie von seinen bedeutenden Kollegen am Wohnorte erschlieszen sich ihm zu vertrauter Aussprache. Hier kommt dem Buche das Malertalent des Verfassers zugute : er entwirft mit wenigen Worten lebensvolle Augenblicksbilder der Persönlichkeiten. Besonders genannt seien (in der Reihenfolge des Buches) : HELMHOLTZ, KOLBE, KRAUT, WÜLLNER, KEKULÉ (mit einem kennzeichnenden Ausspruch über die Aussichtslosigkeit des Affinitätsproblems), HORSTMANN, BUNSEN, VIKTOR MEYER, WAAGE, GULDBERG (dem OSTWALD den überragenden Anteil an den Arbeiten der beiden zuschreibt), JULIUS THOMSEN, der Physiologe KARL LUDWIG (mit einem interessanten Streiflicht auf die Geschichte der Universität Leipzig), WUNDT, PFEFFER, RATZEL, G. TH. FECHNER, W. ROSCHER, LEUCKART, SOPHUS LIE, KARL LAMPRECHT, KOPP, HITTORF, VAN 'T HOFF, CRUM BROWN, LORD KELVIN, KÜLPE, ERNST MACH, JAQUES LOEB, TÖNNIES. — Von groszem Interesse sind dann die allgemeinen Betrachtungen, die der Verfasser von eigenen Erfahrungen ausgehend anstellt und auf die hier nicht im einzelnen eingegangen werden kann.

Eine wichtige Ergänzung einer Selbstbiographie wie der vorliegenden würde sich ergeben, wenn die Methoden der neueren Wiener Psychologenschulen anerkannt und berücksichtigt würden. Die Schule der Psychoanalytiker und diejenige der Individualpsychologen stimmen darin überein, dass frühe Kindheitserlebnisse für die Einstellung des Menschen zur Umwelt, ja vielfach auch für seine Begabung entscheidend sind. Es würde sich um nichts geringeres handeln, als von der Klassifikation der Begabungen, zu welcher OSTWALD selbst so wichtige Beiträge geliefert hat, fortzuschreiten zur Aufstellung von Kausalreihen. Wie entsteht die Begabung zum Chemiker?. Wie die Eigenart des Romantikers, des Klassikers ? Sich hier mit dem Hinweis auf die Vererbung abzufinden, dazu besteht kein Anlasz ; der Erfahrung liefert nur fur die Vererbung des mathematischen und des musikalischen Talents bestimmte Anhaltspunkte. Der Bericht OSTWALDS legt Vermutungen über ganz andere Zusammenhänge nahe. Einiges Material im obigen Sinne bringt er bei ; aber genaueres Eingehen auf die Fragestellungen FREUDS und ALFRED ADLERS könnte zu Aufschlüssen von weittragender Bedeutung führen.

Begreiflicherweise bringt das erfreuliche Werk auch minder willkommene Beiträge zur Menschenkenntnis ; ein Beispiel wurde erwähnt. Auch das Kriegserlebnis hat einige Schatten darauf geworfen.

Der dritte und letzte Band, der von dem reichen Leben des « freien

Forschers und praktischen Idealisten » OSTWALD berichten soll, wird wohl Register und Bibliographie bringen. Man darf ihm mit Spannung entgegensehen.

(*Brünn.*) ERNST BLOCH.

K. Ogata. — OGATA KŌ-AN *and Amori* (in Japanese). Osaka, 1927. 55 pp.

OGATA KŌ-AN (1810 - 1863) was an eminent physician, trained by European instructors and practising their methods. He was born at Amori, a town in the province of Bicchū, being the second son of a Samurai retainer of the local ruler. As a young man he went to Ōsaka where he studied under NAKA TAMAKI, a man of scholarly attainments who had been trained by Dutch teachers, and later he visited both Yedo (Tokyo) and Nagasaki for the purpose of perfecting his knowledge of the Dutch language. At the age of twenty-eight he returned to Osaka and there began the practice of his profession, attaining great renown as one of the leading physicians of his country. A few years later he opened a school in which he taught the European sciences in general and medicine in particular to a large number of pupils. In the autumn of 1849 the art of vaccination was introduced into Japan, and by the beginning of the following year he used it at Amori under the patronage of his feudal lord, administering the treatment to some thousand people. In Ōsaka, however, he and his followers had a more difficult task, and it was ten years before he could obtain permission to give immunity to the disease. In Yedo the opposition was still stronger, and twelve years had elapsed after his success in Amori before the necessary sanction was forthcoming. OGATA was also a leader in making modern theories accessible through the medium of scientific textbooks, his work on pathology being the first to appear in Japan. So great was his reputation that he was appointed personal physician to the Shogun in 1862, at the same time acting as head of the Shogunate school of Dutch medicine. He died in the following year.

The work under review was written by his grandson who, fortunately having access to the records preserved in his family, was able to present an exact and detailed biography of his illustrious ancestor.

YOSHIO MIKAMI. (1)

Yoshio Mikami. Characteristics of Chinese Mathematics (in Japanese). *Tōyō Gakuhō*, 15, 431-484; 16, 49-109, Tokyo, 1926.

The author discusses the following general topics : (1) Introduction ;

(1) The writer of this review and the following one (p. 82) wishes to express his thanks to Professor DAVID EUGENE SMITH for kindly revising his manuscript for publication.

(2) Leading periods in the history of Chinese mathematics; (3) Mathematics of modern China compared with that of Japan in feudal times ; (4) Mathematics in relation to the calendar; (5) Biographies of Chinese mathematicians and the general development of mathematics in China ; (6) Ancient treatises on mathematics; (7) The periods of the production of these treatises; (8) The contents of the « Nine Sections » ; (9) The contents of the other ancient works ; (10) The quadrature of the circle ; (11) The verses used by the early Chinese in multiplication; (12) The calculating rods ; (13) Various methods of using the rods ; (14) Method of representing numbers in the *Shu-Shu Chi-i* ; (15) Mathematics in the 13th century ; (16) The calculating rods in connection with algebra ; (17) The indeterminate equation $ax + by = 1$, and the method of differences in relation to the computation of the calendar.

The author asserts that, considering the great extent of time covered by Chinese history and the remarkable development of culture among the learned class, the progress of mathematics was disappointing. On the other hand, as he says, this judgment is based upon imperfect knowledge, for of all the mathematical treatises written up to and including the Tang Dynasty, only ten are extant. It may therefore be the case that many valuable methods discovered by the ancient Chinese have been lost — methods that would have given us quite a different idea of their scientific powers. Indeed, we have evidence of the fact that the *tiao-jih-fa* method, attributed to K'Ê CH'ÊNG-T'IEN and the plan developed by TSU CHUNG-CHIH for the approximate quadrature of the circle are both lost, leaving only a few obscure records of their existence. Even the special methods of algebra that were used in the 13th century were quite forgotten in the centuries immediately following. In spite of these losses, however, it is fairly certain that the records which we have, obscure though some of them may be, are quite sufficient to give us a general idea of the nature of the science throughout the period of recorded history.

Of the twelve ancient treatises forming the canonical works adopted by the Tang government, all but two have survived, and from them it is possible to re-establish the foundations upon which the early science rested. Giving to these evidences all possible credit, however, we must conclude that they do not show that China ever contributed, through her unaided efforts and in any noteworthy way, to the advance of the mathematical sciences. In making this assertion, however, we should recognise, as stated above, the necessity for caution in assuming that the Chinese are lacking in mathematical power. The development of mathematics in Japan, which began only in the 16th century, shows that the ability of a people in certain lines of intellectual activity should not be judged merely by their inactivity in early periods of their history.

In the case of Chinese mathematics the same situation may arise; indeed, even as to the past, there is necessity for minute scrutiny of all evidence, however obscure, before pronouncing a final decision. (1)

DAVID EUGENE SMITH.

Nyoden Ōtsuki. — *Shinsen Yōgaku Nempyō* (Newly revised chronological table of Occidental learning in Japan). In Japanese. Tokyo, 1927, pp. XVI + 158.

With the appearance of this work there has come to Mr. ŌTSUKI the unusual experience of seeing through the press, at the age of eighty-two, the revision of a book written by him a full half century before. His interest in the culture of the West is explained in large part by the fact that both his father and grandfather, members of the feudal clan of Sendai, were prominent occidentalists. To his own accomplishments in the same field was added a profound knowledge of the Japanese and Chinese literatures.

The first edition of the work under review, and the first treatise of the kind to appear, was written in 1876, the fiftieth anniversary of his grandfather's death, and was published in the year following, the record being brought up to that date. In later years the author frequently expressed a desire to revise the work of his early days, but it was not until 1916 that he was able to undertake the task. In 1923, when it was nearly completed, the great earthquake and fire occurred, destroying all of his extensive library. He barely escaped with his life, but had the presence of mind to carry with him substantially all the manuscript of his work. After three years of delay the revision was finally prepared for the press and was issued in photographic facsimile except for fifteen pages of preface, which appeared in printed form.

Although the work is nominally a chronological table, it contains numerous biographical sketches and also a series of notes descriptive of the books mentioned. From these it appears that the early occidentalists were chiefly physicians, except such as served as interpreters in the open port of Nagasaki, the result being that most of the treatises written by them referred to medicine. There were, however, numerous publications on astronomy, a fact which shows that the Japanese scholars of Tokugawa Shogunate drew directly from western sources, whereas they had done so indirectly in earlier years, as in the reform of the calendar in 1797, through the medium of Chinese translations. One of the first noteworthy instances of the direct European influence is seen in the fact that in 1803 the Shogunate placed a copy of LALANDE's great treatise in the hands of the official astronomers. This led to a careful study of

(1) From English notes supplied by Mr. MIKAMI.

the work by TAKAHASHI YOSHITOKI and the compilation (1803) of a set of notes entitled *Rekisho Kanken* in eleven books, of which eight are still extant, being in the house of the descendants of his pupil INO, the well-known geodesist. TAKAHASHI died in the following year (1804) at the early age of forty.

Basing his work on TAKAHASHI's notes or else upon a new study of LALANDE, SHIBUKAWA KEIYU, a son of TAKAHASHI, published (1836) a treatise in forty volumes entitled *Shinkō Rekisho*. In 1838 a translation under the title *Seireki Shinsho*, by YAMAJI KAIKŌ, was made from the Dutch, and upon these two publications of 1836 and 1838 a reform of the calendar was attempted in 1841.

Although a considerable number of works on physics, chemistry, and industrial problems were translated in this period, the influence of western mathematics was slight. It is true that UCHIDA GOKAN established a school bearing the European name « Mathematika » and that two occidental arithmetics appeared in 1857, but these were all of slight consequence. In the extensive encyclopedia, *Koji Ruiyen*, it is asserted that SHINO's *Kakki Sampō* gave evidence of a knowledge of the meaning of the European term « calculus », but we are quite ignorant of the extent to which the contents were influenced by western methods. This ignorance is not to be attributed to ŌTSUKI's lack of scholarship, but to the fact that the Japanese of that period were not proficient in foreign tongues and that there is scant evidence of European learning in any of their works. It is for this reason that the publication under review is so deficient in information relating to the mathematical sciences. Moreover, while the Japanese scholars of the early part of the nineteenth century acknowledged the superiority of the Chinese and the Europeans in all matters relating to astronomy and the calendar, they openly claimed that their own ability in mathematics surpassed that of western scholars.

YOSHIO MIKAMI.

Scientific Japan, Past and Present. Prepared in connection with the Third Pan-Pacific Science Congress, Tokyo, 1926. VII + 359 p., 47 pl., 3 maps. Tokyo, Maruzen Co., 1926.

This handsome volume contains a large quantity of information which had never been gathered before in such compact and convenient manner. It was published under the direction of the National Research Council, edited by Professor SHINZO SHINJO, and prefaced by Dr. JOJI SAKURAI, President of the Imperial Academy. It is divided into fourteen chapters, of which the first seven are descriptive and the following six, historical. The final chapter contains a list of the learned institutions of Japan (academies, scientific commissions, universities, libraries, research institutes, etc.), together with the names of their members or leaders ;

it forms a brief but very impressive account of the scientific activity of modern Japan.

Of course, the chapters most interesting to us are the six historical, but before dealing with them, I wish to say a few words of the descriptive chapters which precede them : NAOMASA YAMASAKI, professor of geography in the Tokyo Imperial University, gives us a geographical sketch of Japan ; TAKEMATSU OKADA, director of the Central Meteorological Observatory, deals with the climate of Japan and with the meteorological service ; NOBUYASU KANEHARA and SHIGETARO KAWASAKI, directors of the Imperial Geological Surveys of, respectively, Japan and Korea, explain the geology of both countries ; BUNZÔ HAYATA and TOKIO KABURAKI describe, respectively, the flora and fauna ; YOSHIKIYO KOGANEI, AKIRA MATSUMURA, and NENOZO UTSURIKAWA describe very briefly the races of the Empire ; and finally, AKITUNE IMAMURA gives a most interesting account (36 pp.) of the great earthquake of Sept. 1, 1923.

The main purpose of the historical chapters (pp. 177 to 310) was to make it clear to foreigners that Japanese interest in science does not date back only to the time of the Meiji Restoration (1868), nor even to the early contacts with Dutch science or Christian proselytism. It must be admitted that the average European or American scholar has but the most fragmentary and distorted knowledge of early Japan. I hope that the first volume of my *Introduction* will help to dissipate that ignorance, in spite of its being itself very incomplete and not seldom erroneous ; at any rate it will oblige Western readers to pay more attention to Japanese developments, and this will be in itself a real progress. To return to the present volume, the history of mathematics was intrusted naturally enough to our friend, YOSHIO MIKAMI, whose important studies on the subject are well known to our readers (see *Isis*, passim, but chiefly 2, 9-36, 410-13 ; 4, 70-81 ; 7, 602). There is no point in summarizing a summary, but I shall indicate a few passages which have arrested my attention. To begin with, all Chinese and Japanese names are given in the original and transliterated forms (this applies to every historical chapter), which is a great convenience.

(P. 179). « Multiplication-tables, or more properly, tables of multiplication verses, are found in complete form in no Chinese work older than the 13th century. But the *Shih-chi*, the *Kuan-Tsê* and other old works contain portions of such verses, which accordingly seem to have been used in ancient China. The Japanese work *Kuchizusami* of the 10th century gives a table of multiplication-verses, which begins with 9×9 and ends with 1×1. A passage in the *Sun Tsê Suan-ching* indicates the use of the table in the same order in old China. Another piece of evidence was recently furnished by the discovery of a fragment of such a table at Tun-Huang, near the western border of Kansu Province in

China. The tables of multiplication-verses given in the Chinese treatises of the 13th century and after are in the natural order. In Japan, however, the reversed order remained in use until still later. Tables of divisionverses were also used in China after the 13th century. The Chinese ideographs lent themselves very well to the formation of such verses. »

(P. 181). The cubature of the sphere by TSU HÊNG-CHIH, a son of TSU CH'UNG-CHIH (second half of fifth century ; *Introd.*, I, 410), was effected by a kind of integration (we should like to know more about this).

(P. 184). A curious particularity of the Japanese names of numerals : hi (1), hu (2) ; mi (3), mu (6) ; yo (4), ya (8). The Japanese knew a kind of game, *mamako-date*, resembling the European Josephus' problem and not found in China. It is recorded in a number of old documents after the XIth century. This is interesting because when mathematics finally developed in Japan, reaching its golden age at the end of the XVIIth century (1), it remained essentially a sort of game or art, a fact which is less surprising if one recalls the highly artistic temperament of the Japanese people.

(P. 195). « The *soroban* (abacus) was brought from China to Japan. The oldest examples in existence are one in Ise Province belonging to the Bun-an Era (1444-49) and one that was used by MAYEDA TOSHI-IYE and handed down to his family, Marquis Mayeda. The Japanese at first used instruments imported from China or those made after the Chinese fashion. But there soon arose Japanese styled instruments, in which the balls were made sharply edged, whereas the Chinese abacus was provided with somewhat rounded balls. In China there is no evidence that the development of mathematics was influenced by the *soroban*. It was otherwise in Japan. As the *soroban* was simpler to manipulate than the calculating sticks, Japanese mathematicians were in general desirous of making as much use of the former as the case would permit. But higher equations could be solved only by means of the sticks, and not by the *soroban*. Consequently mathematicians hoped to devise a method by which calculations of all sorts could be carried out by means of the *soroban*. The establishment of infinite expansions and successive approximations resulted. There appears no trace, on the contrary, in Chinese mathematics, contemporary or otherwise, of the *soroban's* having had so important an influence. »

The history of astronomy is dealt with by SHINZO SHINJO, professor of cosmical physics in the Kyoto Imperial University. The origins of

(1) *Isis* 2, 411. It is curious to note that the greatest mathematician of old Japan, SEKI, was born in the same year as NEWTON, 1642.

far-eastern astronomy are still very obscure; some would consider ancient Chinese astronomy autochthonous, others would trace it back to Hellenistic influence (2) The author of this summary, based upon a thorough study of the documents, would favor the first alternative, because he fails to detect in the development of Chinese astronomy any sharp discontinuity, such as foreign influences would have introduced. He recognizes the following landmarks in that history (p. 200) :

« *a*) Introduction of the solar calendar at the time of the Emperor YAO, presumably about the 24th century B. C.

b) Introduction of the 28th *hsiu* system, about the beginning of the CHOU dynasty, in the 12th century B. C.

c) Introduction of the gnomon, a little before the middle of the Ch'un ch'iu period (722-481 B. C.), for observing the exact epoch of the solstices.

This seems to have aroused the idea of considering the winter solstice the ideal beginning of the year.

d) Important progress was made about the middle of the Chan kuo age (« Struggle age, » 480-250 B. C.);

Foundation of a definite calendar system, the *Chuan yü* calendar in this case ;

Observation of the five planets ;

Foundation of the *wu hang* theory (« Theory of the five essentials ») ;

Systematic observation, naming and cataloguing the constellations, etc.

e) Adoption of the first official calendar system, the *T'ai ch'u li*, in 104 B. C. »

A little further, SHINJO speaks of SHIH- SHÊN's star catalogue, of which he has made a special study. It is a list of 120 stars, the probable date of observation being *c*. 300 B. C., the degree of accuracy about the same as that obtained by HIPPARCHOS (?). I am very sorry that I did not hear of this before publishing vol. I of my *Introduction*. At any rate, more information about this catalogue is urgently needed, and I would be very grateful to Professor SHINZO SHINJO if he would kindly give it to our readers. It is strange that his paper is concerned exclusively with Chinese astronomy ; was there nothing to be said of the Japanese?

I have spoken at such length of the first two essays that I must dispose more promptly of the others : MITSUTARO SHIRAI, professor in the Tokyo Imperial University, gives an account of botany in old Japan (pp. 213-27), and YU FUJIKAWA, professor in the Kei-o Gijuku University, outlines the history of medicine (pp. 229-42). The latter is already well known by his German publication on the subject (Tokyo, 1911). AYAO KUWAKI, professor of physics in the Kyushu Imperial University, explains the development of physical sciences from the time of the first contact with the Occident until the Meiji Restoration (pp. 243-50). Finally, there is an elaborate account of Japanese seismology, prepared by TORAHIKO

(2) For example, Professor T. IJIMA, who published an elaborate treatise on the subject (in Japanese, Tokyo Bunko, Tokyo, 1926).

TERADA and TAKEO MATUZAWA, both professors in the Tokyo Imperial University. This last account, covering 61 pages (that is almost as much as the five previous essays together, 74 pp.), is out of proportion to the rest, but the fact that seismology represents thus far the most original and fruitful development of Japanese science is a partial justification. This historical account, together with chapter 7, gives one a very good idea of the problems which Japanese seismologists have to solve, and of their wonderful organization and activity. One will find (pp. 172-74) a catalogue of Japanese quakes, from 1596 to 1925 ; a more comprehensive one was published as No. 46 A, B of the Report of the Earthquake Investigation Committee.

The value of this beautiful volume is still increased by a number of well-chosen illustrations and by three maps : a general geological map, a map showing the depression and upheaval of the ground produced in the Kwantō districts by the earthquake of 1923 (scale 1 : 200,000), and a map of the seismic area of the same earthquake.

My only regret is that the historical survey was not extended to other important branches of science, such as chemistry, zoology, biology, geography and geology, and that an archaeological summary was not included. A list of the earliest monuments and inscriptions, together with a map showing their geographical distribution, would have been very valuable. In fact, the only archaeological document which I found in the whole volume (outside of the indications given in the historical chapters) is the photograph representing a « ruined astronomical observatory in Keishu (Kyŏng-ju), the capital of the ancient Kingdom of Shiragi (Shinra) in South Korea. This observatory was built in A. D. 647 by a Queen of Shinra » (Pl. VII), but this is not explained. As it is, this volume is already so rich that my criticism may seem ungracious.

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As this publication was prepared in connection with the Third Pan-Pacific Science Congress (Tokyo, 1926), it gives me a welcome opportunity to speak of this Congress. The first took place in Honolulu, 1920 ; the second, in Melbourne and Sydney, 1923 ; the fourth is scheduled to occur in Java, 1929. It is now a well-established institution, having already its own traditions ; its practical importance can hardly be exaggerated. It encourages the pacific discussion of Pacific problems under the best conditions, that is, on the very spot. The average European or American scientist is too remote to understand them well. Moreover, it brings together in a new international union the people of the Far East and of the Far West, those for whom it is most difficult to attend

the old European centers of culture ; it creates for them a new cultural center. Indeed, it is not improbable that the Pacific Ocean will some day displace the Atlantic, as a cultural axis, even as the Atlantic has displaced the Mediterranean Sea. It is interesting to note that English is the official language of this international congress, and that the South American nations have thus far failed to join it. These nations are still hypnotized by Europe ; they do not realize that the destinies of the new world, intellectual as well as material, are more likely to be shaped in the Pacific than in the Atlantic region. (3).

One more word : the attention of the Pan-Pacific Congress seems to be focused mainly upon scientific problems in the narrower sense ; I hope that future sessions will devote more time to the consideration of anthropological, ethnographical, and archaeological problems, to the study of cultural exchanges and transmissions. So many such problems are still to be solved, which cannot be solved save by the collaboration of Pacific archaeologists, Oceanists, and Americanists, that it is worth while to unite their efforts. May the Java congress be as successful as its predecessors. GEORGE SARTON.

George Sarton. — *Introduction to the History of Science*. Volume I, from HOMER to OMAR KHAYYAM. Published for the Carnegie Institution of Washington (Publication no. 376) by the Williams and Wilkins Company, Baltimore. 1927. xii + 839 p.

This stout volume is the first installment of Dr. SARTON's ambitious plan for a comprehensive history of science (*Isis*, IV, 23-31) which shall include a purely chronological survey in seven or eight volumes, surveys of different types of civilization, e. g. Jewish, Muslim, and Chinese, which will require seven or eight volumes more, and a survey in eight or nine volumes of the evolution of the special sciences. Being a prudent man, the author does not expect to complete this stupendous program within a single lifetime, even with the aid of collaborators, but he hopes to accomplish enough in each division to justify the scheme and establish his method. In this hope all friends of the history of science will join.

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(3) As this may seem a rash statement, I am glad to add the following corroboration of it, which I read, after having written this review, in an article on world trade by CLIVE DAY, published in *Foreign Affairs*, the excellent political quarterly edited by ARCHIBALD CARY COOLIDGE (Vol. 5, 1927, p. 634) :

« 'Trade is passing from the Atlantic to the Pacific.' That is the closing sentence of the League's latest memorandum on Balance of Payments and Foreign Trade Balances, summarizing the changes in the currents of the world's trade. ' The United States and India now buy less from Europe and more from Asia; China and Japan buy less from Europe and more from North America ; Australia less from Europe and more from both North America and Japan.' »

The author approaches the history of science, « that is, of systematized positive knowledge, » from the point of view of the general history of civilization, as a phase not necessarily more important than other aspects of intellectual progress, but more neglected, and at the same time dealing with « the only human activity which is truly cumulative and progressive. » Under science he includes philology, applied science, and much philosophy and pseudo-science, while he gives much attention to the history of religion as a parallel evolution of the greatest importance. Something is also said of law and historiography, but references to political and economic history and the history of art are omitted on the ground that these are sufficiently well-known.

With this general treatment the historian of civilization need have little quarrel. He will not identify the history of science with the history of civilization, but he will admit that it forms a large and essential part thereof. If Dr. SARTON's perspective overemphasizes the advance of knowledge at the expense of progress in social and political organization, this may well be admitted for the moment because of the relative neglect of the history of science, and so long as the general history of civilization remains the ultimate objective, it is not likely to be injured thereby. It is hard to say whether the history of science has suffered more from the disregard of general history than the general historian has suffered by ignoring the history of science. The continued emphasis upon the intimate connection of the two is one of the prime excellences of all of Dr. SARTON's work.

His breadth of view appears in still another way, namely in his extended treatment of Oriental science both in the Near and the Far East. This is manifest throughout but is especially notable in the mediaeval sections, where the emphasis upon the Muslim renaissance of the 9th century and the enumeration of Arabic scientists are particularly helpful to those for whom Arabic science has been only a name. At the same time, in bringing Arabic science more fully into its own and emphasizing the scientific superiority of Islam, the author does not depreciate the Christian learning of the Middle Ages, indeed he is at some pains to justify mediaeval science in the general perspective of European development. In stopping about the year 1100, he breaks off just before the reception of Arabic science in the West occasioned a profound change in the European outlook. Nevertheless, while so far as the present volume extends, these two currents remain almost entirely distinct, the history of science recognizes no water-tight compartments and even reveals connections between distant peoples which escape the political historian. Good examples are the westward diffusion of Chinese silk-culture and Chinese printing, of Arabian mathematics and medicine, and of Byzantine art and learning. Another notable illustration (pp. 330-333) is the wide spread

of Manichaeism and its significance as a transmitting agency between East and West.

The author's method is best described in his own words :

« Each chapter is devoted to a single period ; the first to a period of indeterminate length, the three following to centuries, and all of the remaining ones, thirty in number, to periods of half a century each. Each begins with a summary of the main facts, a simplified account of the development of science during that period. The first section of each chapter and this introductory chapter are the only parts of my work which are intended for continuous reading. The remainder of the material is incorporated for purposes of study and reference. »..... « Thus, the best way of using this work is to read the introductory chapter and the first section of succeeding chapters, and to consult the other sections only as far as may be necessary to satisfy one's curiosity or to find an answer to a definite question. »

Some such arrangement was perhaps inevitable in a pioneer survey of so enormous a field, but it makes hard reading at the best, and may well discourage the use of the work on the part of those whose interest is not specialized. The general sections are compact and full of meat, but they are very brief and, in large measure, isolated, while the chronological cross-sectioning, though defensible from the point of view of method, necessarily obscures the development of particular sciences and sometimes the whole movement. The appearance of discontinuity is increased by the great length of the bibliographical portions and by the fact that they are not sufficiently distinguished from the text by small type and a freer use of italics; the cost of printing has thus been reduced at the expense of the reader's convenience. Highly impressive in its comprehensiveness and its great learning, the volume becomes chiefly a work of reference, a cyclopedia chronologically arranged but with connective tissue of the greatest importance to those who will pick it out.

The mass of information and the succinctness of the author's style should not be allowed to cover up the fact that the book is full of ideas as well and contains many suggestive observations like the following :

« Who is it who said that every thinking man is either a Platonist or an Aristotelian ? At any rate, this division is not exhaustive. Some of the greatest men of science throughout the ages, men like LEONARDO, STEVIN, GALILEO, and HUYGENS, for example, represent another type, which might be called the Archimedian type. And it is largely because of the existence of that type that occidental science has become what it is ». (p. 167).

« The discovery of the logical structure of language was as much a scientific achievement as the discovery of the anatomical structure of the body » (p. 179).

« While Western Europe was shivering in the cold, China was basking in the morning sun. A little later these conditions would again be reversed. During the course of my studies of human progress, I have often had the impression that everything happens as if mankind were working in shifts » (p. 443).

« Science always was revolutionary and heterodox ; it is its very essence to be so ; it ceases to be so only when it is asleep » (p. 647).

The examination of such a work in detail would require the vast and encylopedic learning of the author, and even more, in fields so far apart as Chinese chronology, Hindu and Thibetan philosophy, the Jewish and Christian Scriptures, Arabian medicine and astronomy, Greek and Latin literature, and the whole learning of the Byzantine East and the Latin West during the Middle Ages. All that a reviewer can hope to do is to scrutinize with some care the sections with which he is most familiar, resting assured that the greater part of the work will lie outside his more special competence. The bibliographical apparatus clearly represents enormous labor, generally performed with accuracy and discrimination, and is sure to be of great value to the user. The bibliographies seem weaker on accessory topics such as historiography and law. Thus there is no citation of the standard manuals of mediaeval historiography such as WATTENBACH, MOLINIER, and GROSS, which the reader would require in order to follow up the chronicles and check their historical value. So on the side of Germanic law we miss books like BRUNNER's *Deutsche Rechtsgeschichte* and LIEBERMANN's *Gesetze der Angelsachsen* while the documentation is weak for the Salic law and the recent discussions of CHARLEMAGNE's capitulary *De villis*. Indeed agriculture and technology must always run into economic history, so that books on economic history cannot on principle be excluded. In the philosophical sections we miss reference to the elaborate bibliographies of the current editions of UEBERWEG as well as to the last (1924) edition of DE WULF. In the Graeco-Roman portion we could spare some of the many dissertations on the stylistic influence of particular writers.

Apart from certain Gallicisms which can easily be remedied in a future edition and certain inconsistencies in the form of place names, the following represent the kind of observations I have made in the course of the volume :

P. 109 The chronology of early Roman history gives the impression of too great definiteness. P. 127 The references on the legend of ALEXANDER are inadequate. P. 129 The influence of ARISTOTLE on political science should be more explicitly stated. P. 233 No translations of LIVY are given, nor is modern criticism sufficiently represented. P. 250 See further RÜCK in the Munich *Sitzungsberichte*, 1902, pp. 195-285. P. 418 line 18 For « Constitution » read « Code ». P. 430 The starting-points

of the Byzantine cycles should be given. P. 455 After GILDAS one expects some reference to NENNIUS. P. 456 The editio princeps of GREGORY OF TOURS should be cited (Paris, 1512). P. 559 DREXL's recent edition of ACHMET should be cited in a future edition. P. 576 We miss the American translation of EINHARD by S. E. TURNER. P. 782 GOETZ's *Corpus glossariorum* should be mentioned.

Cambridge, Mass. CHARLES H. HASKINS.

Tannery, Paul (1843-1904). — *Mémoires scientifiques*. Volume VIII. Philosophie moderne. 1876-1903. Edité par J. L. HEIBERG. XV + 413 pp. Toulouse, Edouard Privat, 1927.

La publication des mémoires de PAUL TANNERY se poursuit si rapidement qu'à peine avons-nous achevé l'examen d'un volume que déjà le suivant sollicite notre curiosité. Le volume VI, qui parut après le volume VII, fut analysé dans *Isis*, IX, 472. Le présent volume est consacré tout entier à des études de philosophie et nous révèle de nouveaux aspects de la personnalité si complexe et si riche de l'auteur. Il ne contient pas seulement de fortes études sur la philosophie des mathématiques et des sciences physiques — ceci ne nous étonne guère — mais plusieurs articles consacrés à des questions de métaphysique et de psychologie.

L'intérêt de ce livre est plutôt historique que philosophique, car il faut bien avouer qu'en dépit de leur très grande valeur au moment de leur publication, plusieurs de ces études sont évidemment surannées. Tant de progrès ont été faits, depuis la mort prématurée de TANNERY, tant de clartés nouvelles ont été projetées sur les questions fondamentales qui occupaient son attention, qu'il est devenu impossible de les considérer comme il le faisait. Il eut été d'ailleurs tout le premier à tenir compte de ces faits nouveaux, tout comme il fut le premier (en 1876) à expliquer au public philosophique français les géométries non-euclidiennes. Les discussions sur la relativité par exemple, nous ont obligés à modifier nos vues sur l'espace et le temps ; l'atomisme a cessé d'être une simple vue de l'esprit. TANNERY pouvait écrire en 1897 (p. 303) : « Le terme d'*atomisme* est aujourd'hui sur le point de devenir aussi vague et, par là même, philosophiquement aussi incommode que celui de *réalisme*, par exemple; on commence à l'appliquer sans scrupule à des doctrines, non seulement essentiellement différentes, mais même véritablement contradictoires. » Personne n'écrirait cela aujourd'hui. Nos idées sur la gravitation universelle ont été profondément modifiées par la théorie de la relativité ; la psychoanalyse, abstraction faite des exagérations auxquelles elle a conduit, nous a obligés à concevoir différemment la psychologie des rêves; et ainsi de suite. Bref, en lisant les parties de ce livre qui m'intéressaient le plus, je ne pouvais m'empêcher de me dire tout le temps : Quel dommage que TANNERY n'ait pas pu être le témoin des

crises de la science contemporaine, crises passionantes, dont il n'a connu, hélas ! que le début. Un esprit aussi clair et aussi bien informé que le sien aurait pu nous aider à les surmonter.

Il n'est guère possible, ni d'ailleurs désirable, de résumer ici tous ces essais. Il suffira de les énumérer, en indiquant pour chacun d'eux la date de publication et le nombre de pages :

La géométrie imaginaire et la notion d'espace, 1876-77 (pp. 1-60). Note sur les forces attractives et répulsives, 1878 (pp. 61-74). Essais sur le syllogisme, 1878 (pp. 75-108). Une théorie de la connaissance mathématique, 1879 (pp. 109-169). Lettre au Directeur de la Revue Philosophique (sur le sujet qui précède), 1882 (pp. 170-172). Le libre arbitre et le temps, 1883 (pp. 173-177). Les forces fonctions du temps, 1883 (pp. 179-186). Critique de la loi de WEBER, 1884 (pp. 187-217). La théorie de la matière d'après KANT, 1885 (pp. 219-247). La suggestion mentale et le calcul des probabilités, 1885 (pp. 249-251). A propos de la loi de WEBER, 1886 (pp. 253-256). Sur la parole intérieure, 1887 (pp. 257-264). Questions de philosophie mathématique sur la notion du temps, 1888 (pp. 265-271). Sur les tentatives d'explication de la gravitation universelle, 1890 (pp. 273-283). Sur l'activité de l'esprit dans le rêve, 1894 (pp. 285-290). Sur le concept du transfini, 1894 (pp. 291-301). Qu'est-ce que l'atomisme ?, 1897 (pp. 303-337). Sur la mémoire dans le rêve, 1898 (pp. 339-346). Sur la paramnésie dans le rêve, 1898 (pp. 347-352). La droite transfinie, 1900 (pp. 353-357). Sur la question de l'infinitude de l'univers, 1901 (pp. 359-363). La verité scientifique, 1901 (pp. 365-375). La science et l'hypothèse, 1903 (pp. 377-393). LEIBNIZ, Article de la Grande Encyclopédie.

L'article LEIBNIZ ne se rapporte qu'à l'histoire des mathématiques. Les deux derniers articles m'ont tout particulièrement intéressé. Sa discussion du livre immortel de POINCARÉ est fort instructive. Le dernier paragraphe de l'article précédent nous donne une bonne idée de son point de vue et aussi de la clarté de son langage (p. 374) : « La vérité scientifique ne réside que dans la légitimité d'une conclusion tirée de principes abstraits, — elle est alors relative à ces principes, — ou dans la constatation précise d'un fait, — alors la rigueur mathématique lui fait nécessairement défaut. Quant aux principes abstraits de l'expérience, ils peuvent, sans doute, être énoncés sous des formes fausses (1), si l'on en déduit des conséquences en contradiction avec les faits. Mais la forme correcte n'est ni unique ni nécessaire ; on ne peut donc dire proprement

(1) « Ainsi le principe de l'indépendance des effets des forces est faux, lorsque l'on ne spécifie pas que les forces sont indépendantes entre elles. Si un corps est soumis, par exemple, à l'action de deux corps électrisés, A et B qui réagissent entre eux, l'effet simultané sur le premier corps ne s'obtiendra pas en composant les effets des actions isolées de A et de B. »

qu'elle soit vraie ; entre le vrai et le faux, il y a un tiers non exclu, c'est le possible. » GEORGE SARTON.

John Todd Zimmer. — *Catalogue of the Edward E. Ayer ornithological library*. 2 vol. x + 706 pp., 12 pl. Chicago, Field Museum of Natural History, 1926.

Mr. EDWARD E. AYER, born at Kenosha, Wisconsin, in 1841, is a successful business man who nurtured from his boyhood on a deep interest in birds. One of the outstanding reminiscences of his early days in northern Illinois, near the town of Harvard, was his witnessing one of the flights of the now extinct Passenger Pigeon, « one of the really great flights in which the birds passed in clouds for hours and hours, literally darkening the sky. » He was one of the pioneers who left the Middle West to go and work in Nevada and California. When the Civil War broke out, he was one of the first there to enlist, and for the next three years he was in service in southern California, Arizona and New Mexico. It was during this time that a copy of PRESCOTT's Conquest of Mexico fell into his hands and impressed him very deeply. He was the first President of the Field Museum and is still one of its trustees and one of its greatest benefactors.

The present volume is the very elaborate catalogue of Mr. AYER's ornithological library. Collecting books on birds is a rich man's sport, for many of these books are exceedingly expensive. The present collection is particularly complete with regard to the most expensive works, because Mr. AYER was especially interested in beautiful colored illustrations. To give an idea of its wealth in that respect, the following statement will suffice (p. 706) : « In the works catalogued in the foregoing pages, exclusive of the periodicals and the general dictionaries of natural history which are listed separately, there are, approximately, 50,995 plates of birds (39,888 in colors and 11,107 plain), 39,347 textfigures of ornithological subjects (987 in colors and 38,360 plain), and 1,981 plates of birds'eggs (1,914 in colors and 67 plain). »

The author, who is assistant curator of birds in the museum, has done his task with considerable care. Not only is each book completely described, but in many cases the bibliographical description is followed by a critical note, going into many technical details and referring to reviews in scientific periodicals. While he was compiling it, he made a great effort to complete the collection as much as possible. The catalogue is thus a real bibliography which will supplement the works of ELLIOTT COUES, WILLIAM HERBERT MULLENS and HARRY KIRKE SWANN. It does not begin to compare with the monumental bibliography of ichthyology compiled by BASHFORD DEAN and E. W. GUDGER (3 vol., New York, 1916-23 ; *Isis*, 6, 456-459), yet it will be very useful. The lack of indices

is unfortunate, and I was startled not to find any mention of MAURICE BOUBIER'S recent history of ornithology (Paris, 1925 ; *Isis*, 8, 515-517). This omission and others may eventually be filled in a supplementary volume, which would also contain the indispensable indices, topical and geographical. Some of the rarest items are reproduced, and there is a beautiful portrait, in color, of the generous founder and donator of this collection. GEORGE SARTON.

Edgar Dacqué. — *Natur und Seele.* Ein Beitrag zur magischen Weltlehre. 8°, 200 S. 1 Bl. Inhalt. München und Berlin, R. Oldenbourg, 1926.

In dem vorliegenden Buch will der Verfasser eine Ergänzung und Vertiefung des metaphysischen Teils seines an dieser Stelle (VII, 1925 S. 165) bereits besprochenen Werkes « Urwelt, Sage und Menschheit » geben : er stellt seine « magische » Weltanschauung in Gegensatz zur mechanistisch-intellektualen. Es ist das naturphilosophisch-metaphysische Bekenntnisbuch eines Naturforschers, den das Erlösungsbedürfnis dazu angetrieben hat, eine Synthese zu suchen bezw. wiederzufinden für Glauben und Wissen. DACQUÉS erstes Buch ist von der Fachwissenschaft geradezu mit Empörung abgelehnt worden, ja, es hat den Verfasser seinen Lehrstuhl an der Münchener Universität und eine Berufung nach Berlin, die in Aussicht stand, gekostet. Dennoch hat es grosses Aufsehen erregt und ist von anderer Seite stürmisch begrüsst worden. Denn es kam zur rechten Zeit : noch nie war wohl das Suchen nach metaphysischen Wahrheiten lebhafter und drängender als in unserer seelenlosen Zeit des wirtschaftlichen Nützlichkeitsideals, der brutalen Machtpolitik, der Kino- und Sporthypertrophie. Andererseits machen sich in vielen Wissenschaftszweigen tiefgehende Umformungen geltend, namentlich auf den Gebieten der Physik, der Biologie und der Psychologie, so dass HUGO DINGLER von einem « Zusammenbruch der Wissenschaft » sprechen konnte. Da finden geistvolle Naturphilosophen wie DACQUÉ, Denker wie DRIESCH, auch die Erforscher der sog. okkulten Erscheinungen ein besonders starkes Echo, und es kann in der Tat nur begrüsst werden, wenn neue Gesichtspunkte und Ausblicke in die Diskussion geworfen werden.

DACQUÉS These ist vornehmlich die Natursichtigkeit des Urmenschen, der in innigster Naturverbundenheit sich selbst und die gesamte Natur als innere Einheit erlebte und der in seinem noch traumhaften, instinktbeherrschten Bewusstsein angeblich über « magische Kräfte » verfügte. Zugleich erschlossen sich ihm nach DACQUÉ Erkenntnisse, die dem Wachbewusstsein des Intellektualmenschen nicht mehr zugänglich sind. In der allmählichen Entwicklung des Menschen zum Intellektualwesen sieht DACQUÉ eine Degenerationserscheinung. Mit dem Verlust der alten

Natursichtigkeit, die mit der Entwicklung des Grosshirns Hand in Hand ging, verlor der Mensch den Zugang zu den Quellen der rein magischen Welteinstellung. MAX SCHELER stellt DACQUÉ daher nicht mit Unrecht in die Nachbarschaft von Vertretern einer radikalen neuen Anthropologie und Geschichtslehre, die im Menschen der Jetztzeit mit seiner einseitigen Entwicklung des Intellekts auf Kosten der instinktsicheren Triebhaftigkeit ein Produkt der Dekadenz sehen, das in eine Sackgasse der Entwicklung geraten ist und dem Artentod entgegensieht — Forscher, die freilich von ganz anderen Gedankengängen ausgegangen sind und sonst mit DACQUÉ kaum eine Berührung aufweisen. THEODOR LESSING hat für diese Auffassung die paradoxe Formel geprägt : Der Mensch ist eine auf ihren sogenannten « Geist » langsam grössenwahnsinnig gewordene Raubaffenspezies. Die ganze Menschheitsgeschichte wäre hiernach weiter nichts als der notwendige Absterbeprozess einer von vorneherein todwunden Art. Als Gegenideal zum homo sapiens der Griechen, dem apollinischen Menschen, tritt hier der dionysische Mensch auf. SCHELER nennt das: vitalistische Panromantik. Zu den Vertretern dieser Richtung, die ausserhalb Deutschlands noch wenig bekannt sein dürfte, gehören ausser LESSING, LUDWIG KLAGES, LEO FROBENIUS und OSWALD SPENGLER (SCHELER in der *Neuen Rundschau*, Nov. 1926).

Zu DACQUÉS magischer Naturphilosophie kann man sagen : gewiss, « magisch » ist schliesslich alles letzten Endes : Zeugung, Leben, Bewusstsein — können wir diese grossen Rätsel « erklären » ? Wir müssen einen Kompromiss schliessen mit den Erscheinungen der realen Welt, in die wir hineingestellt sind. Das Grübeln über Axiome, über transzendente Dinge bringt uns der Erkenntnis nicht näher. Unser Sinnesapparat ist der raum-zeitlichen Umwelt angepasst und dient dazu, dass wir uns in ihr zurechtfinden. Darüberhinaus existiert sicher noch ein Etwas, was wir mit Seele, Entelechie oder sonstwie bezeichnen und mit DACQUÉ als « magisch » ansprechen können. Es ist aber nützlich sich zu vergegenwärtigen, dass alles Spekulieren über die letzten Dinge nur zu einem Kompromiss führen kann, und dass das Weltbild eines jeden Denkers nur ein subjektives System, niemals aber die objektive letzte Wahrheit sein kann.

Das Wesen des natursichtigen Urmenschen, den DACQUÉ in weit frühere Zeitalter der Erdgeschichte zurückverlegt als die Paläontologie und die Vorgeschichte es bisher tun konnten, erschliesst er hauptsächlich aus uralten Sagen und Mythen, die er auf neuartige Weise zu deuten sucht. Bisher hat man die heute lebenden Naturvölker als nächstliegendes Vergleichsobjekt herangezogen, wenn man über Denken, Leben und Treiben des vorgeschichtlichen Menschen Klarheit zu gewinnen suchte. Von religiösen oder magischen Vorstellungen des Eiszeitmenschen wissen wir nichts. Mir scheint nun aber, dass Aberglaube, Magie und Zauber-

wesen der Naturvölker, die im Vergleich zum zivilisierten Europäer doch in einem weit innigeren Kontakt mit der Natur leben, *nicht* den Rückschluss gestatten, dass etwa der vorgeschichtliche Mensch hinsichtlich magischer Fähigkeiten vor uns viel voraus hatte. Wohl dürfen wir annehmen, dass die Schärfe seiner Sinne (Gesicht, Geruch, Orientierungssinn usw.) in weit höherem Grade ausgebildet war, denn sonst hätte er den Kampf ums Dasein nicht bestehen können, da er ja den grossen Raubtieren gegenüber an sich so gut wie wehrlos war. Und der Kampf ums Dasein war sicherlich der Hauptanreiz zur Ausbildung des Intellekts, der ihn den Tieren überlegen machte. Aber was berechtigt uns, ihm eine « natürliche Fähigkeit zum Zaubern » zuzuschreiben ? Liegt es nicht immer noch näher anzunehmen, dass die Magie darin bestand, dass der Mensch allmählich lernte, in ständig zunehmendem Masse die Naturkräfte zu beherrschen, auch ohne deren Wesen bis ins letzte zu erkennen ? Weist nicht schon die Sage vom Prometheus, der das Feuer vom Himmel holte, auf die hohe Wichtigkeit des Anbruches einer neuen Etappe in der Kulturentwicklung der Menschheit, als er lernte, das Feuer seinen Zwecken dienstbar zu machen ? Und war nicht jener Unbekannte, der vor vielen Jahrmillionen zuerst durch den Faustkeil die Arbeit des Menschen zu erleichtern verstand, der erste Pionier der Kultur ? Heute wird vielfach das seelenlose Zeitalter der Technik geschmäht. Nun, Bücher wie die R. Weyrauchs (besprochen hier V, 1923, S. 487) oder Graf Coudenhove-Kalergi's « Apologie der Technik » (1922) sind geeignet, eine solche Auffassung zu widerlegen. Es ist auch ungerecht, gewisse unerfreuliche Zeiterscheinungen der Technik zur Last zu legen, die mit der Entwicklung der die Technik beherrschenden Wirtschaft sich herausgebildet haben. Ich möchte hier einen Satz von Günther Bugge zitieren : « Am Anfang der in Dunkel gehüllten Urgeschichte der Technik steht die Frage : wie kam der primitive Mensch zur Technik ? War der Zufall, waren Spieltrieb, Notdurft oder andere primäre Empfindungen die Ursache der ersten technischen Betätigung ? Wir können es nicht wissen. Aber das eine steht fest : die seelischen Voraussetzungen, aus denen die Technik erwuchs, müssen die gleichen gewesen sein, aus denen Religion und Kunst geboren wurden » (*Das Bodenseebuch*, XIII, 1926, S. 123, in einem schönen Aufsatz « Technik und Seele »).

Bisher sahen wir in der induktiven Methode unserer Naturwissenschaft die höchste Errungenschaft menschlichen Geistes in seinem Streben, die Rätsel unserer Umwelt zu lösen. Sie bedeutete Befreiung des Denkens von scholastischem Zwang, sie gab der naturphilosophischen Spekulation sicheren Halt und Rahmen. Und sie hat reiche Früchte gezeitigt. Dacqué spricht von Wissenschaftsmüdigkeit. Unsere Naturforschung sei intellektualistisch verzerrt. Er stellt ihr seine magische

Naturbetrachtung gegenüber und entzieht diese durch Ablehnung der rationalistischen Methode gleichzeitig der Kritik. Der von ihm bekämpften Einseitigkeit unserer Wissenschaft stellt DACQUÉ die subjektive magische Naturerkenntnis gegenüber ohne ein objektives Kriterium derselben zuzulassen. « Wenn Ich, das Subjekt, ein Teil oder ein Kräftekomplex in der allgemeinen Weltenergie bin... so muss der innere Zusammenhang des Ganzen in mir verborgen und fühlbar sein ». Das erinnert stark an ein Grundelement der SCHELLING'schen Identitätslehre, die auf unsere Naturerkenntnis nicht befruchtend gewirkt hat. — Das Mittel der magischen Naturerkenntnis ist die « Hellsichtigkeit », die DACQUÉ als stark ausgeprägten Instinkt definiert. « Dort, wo der Instinkt gesund, Intuition und Verstand gleich klar und besonnen ist, kommt eine geistige Höchstleistung zutage, die weder dem blossen Instinkt, noch dem blossen Intellektualdenken möglich ist. Das ist das Kennzeichen des Meisters, des Genius ». Hierdurch kommen wohl geniale künstlerische Leistungen zustande, aber bei den wissenschaftlichen liegt die Sache vielleicht etwas anders. Der geniale Wissenschaftler — denken wir beispielsweise an Gauss — hat sicherlich vor dem wissenschaftlichen Durchschnittsarbeiter etwas voraus, was man als « Instinkt », als « Hellsichtigkeit » bezeichnen kann. Aber das hat mit Magie nichts zu tun. Immer behalten hier der Intellekt und methodisch geschultes Denken das Primat und weisen der Intuition die Richtung.

DACQUÉS Buch bietet neue Gedanken, es wirkt als Ferment und regt dazu an, die Probleme einmal von einer anderen Seite zu betrachten als von der gewohnten. Das ist immer wertvoll. Abschliessendes wollte er ja auch nicht geben. Seine neuartige Abstammungslehre, die er in « Urwelt, Sage und Menschheit » nur in grossen Umrissen angedeutet hat, ist er im Begriff methodisch auszubauen. Der Verlag kündigt für Ende des Jahres ein Werk DACQUÉS darüber an.

(*München*) Graf CARL v. KLINCKOWSTROEM.

Leon Brunschvicg. — *Le progrès de la conscience dans la philosophie occidentale.* Deux vol. (*Bibliothèque de philosophie contemporaine*), XXIII+364, et 365 à 807 p. in 8), FELIX ALCAN, Paris, 1927. (75 Fr.)

Comment donner en quelques pages une idée de l'ouvrage si riche d'érudition et de pensée que M. BRUNSCHVICG vient de livrer à nos méditations ? Nous ne pouvons entreprendre de résumer ici ce gigantesque travail présenté didactiquement comme un exposé historique du *progrès de la conscience dans la philosophie occidentale*, mais qui est beaucoup plus et mieux qu'un livre d'enseignement de l'histoire. L'auteur, un des professeurs les plus réputés de la Sorbonne, a certes voulu retracer dans une série d'esquisses vigoureuses quelles furent les vicissitudes de la Sagesse humaine dans la civilisation de l'Europe ; mais il n'a pas

fait que cela ; il s'est également proposé d'aider son lecteur à se pénétrer de cette sagesse ; il l'encourage bien souvent à se délivrer de tous les préjugés, si séduisants ou respectables que ces préjugés apparaissent ; il l'oblige à faire une révision sévère de tous ses jugements de valeur, à prendre nettement conscience de ses opinions quelles qu'elles soient, artistiques ou scientifiques, morales, sociologiques ou religieuses ; il lève tous les obstacles qui l'empêchaient à son insu d'écouter la voix de la Raison : une réflexion sérieuse sur l'œuvre de M. BRUNSCHVICG apportera donc à beaucoup d'entre nous le bienfait inappréciable d'une libération de l'esprit.

Par suite de quelles circonstances, M. BRUNSCHVICG qui, jusqu'à présent, a consacré la plus grande partie de son activité à étudier et à renouveler la théorie de la connaissance scientifique, a-t-il été amené à envisager dans toute son ampleur le problème qui fait l'objet du livre que nous analysons ? Dans ses précédents ouvrages, *les étapes de la philosophie mathématique* (ALCAN, 1912, voir *Isis* 1, 577-589, 721-734) et *l'expérience humaine et la causalité physique* (ALCAN, 1922, voir *Isis* 5, 479-483), il avait voulu replacer dans la perspective historique du développement spirituel de l'humanité, l'œuvre des mathématiciens ou des physiciens et les rapports de cette œuvre avec la philosophie générale qui, à la même époque semblait, soit l'avoir inspirée, soit avoir été inspirée par elle. Mais les conclusions qu'il avait tirées de cet immense effort lui avaient pourtant dicté la phrase suivante qui contient déjà le programme du *progrès de la conscience dans la philosophie occidentale*. « L'intelligence du savoir nous a paru liée à la formation d'une *conscience intellectuelle*... la vie scientifique est l'une des bases de la vie proprement humaine, c'est à dire de la vie spirituelle en tant qu'elle s'élève au dessus de l'inconscience instinctive où l'ordre biologique est naturellement enfermé. La conscience intellectuelle devient capable d'appuyer et d'éclairer le progrès d'une conscience morale et d'une conscience religieuse, se libérant des préjugés égoistes et des traditions littérales. »

En étudiant comment la conscience intellectuelle, morale ou religieuse est parvenue à se posséder elle même, à se délivrer des mythes poétiques, des préjugés, des opinions inanalysées ou des erreurs, qui avaient pu la séduire par leur charme, satisfaire une douce paresse, ou encore lui être violemment imposés par une dure pression sociale, M. BRUNSCHVICG a touché à des questions qui passioneront certainement un grand nombre de ses lecteurs ; il l'a fait en respectant infiniment les convictions de chacun, mais de manière à ce qu'il ne puisse rester aucune obscurité, ni sur la signification de ses propres méditations, ni sur les réactions de ceux qui chercheront à assimiler sa pensée ; et il semble bien avoir exprimé l'idéal d'unification et de clarté qui est le ressort animateur de l'âme moderne lorsqu'il écrit. « Le sentiment profond où science,

art, moralité concourent sera celui d'une victoire perpétuellement remportée par la conscience sur son passé. Nous savourons la jouissance intime de voir « clair dans notre cœur », lorsque par delà les alternatives des événements liées au cours du temps, par delà l'ambiguité des apparences sous lesquelles les êtres et les choses se présentent ou se déguisent à nous, nous pouvons nous rendre témoignage que nous sommes remontés assez haut pour ne plus rencontrer, pour ne plus apercevoir, la négation ou la haine, que nous avons contracté vis-à-vis de nous même l'assurance de ne plus être séparé du tout des phénomènes entre lesquels nous avons constitué le réseau des relations scientifiques, du tout des hommes entre lesquels nous avons établi des liens positifs de justice et de fraternité. »

Ce n'est pas, est-il besoin de le dire, par la vertu miraculeuse d'un élan unique, total et spontané que la conscience humaine est parvenue à se conquérir elle même ; pour gagner son autonomie, cette conscience a du procéder par des efforts successifs, et les étapes du progrès furent parfois limitées ou coupées par des périodes de régression dues peut-être à la fatigue du travail accompli, mais aussi à la difficulté de faire rentrer dans l'ancien tableau de valeur auquel l'humanité s'était habituée, le résultat des longues méditations des penseurs et des savants. De là naîtra la tentation à laquelle beaucoup parmi les plus grands philosophes ont cédé, de verser, « du vin nouveau dans de vieilles outres ». De là proviendra l'aspect dramatique de l'histoire de la pensée ; car il est arrivé que les maîtres les plus écoutés, ceux qui ont découvert les vérités dont ils ont invité l'humanité à prendre conscience, ont exprimé ces vérités dans un langage équivoque qui a pu en voiler la claire intelligence; par des artifices maladroits ou esthétiques de composition, ces maîtres ont pu laisser pénétrer dans la spiritualité de leur œuvre admirable, de simples opinions, ou des mythes poétiques qui ont altéré aux yeux des disciples la signification de leur enseignement. De là, et aussi des vicissitudes matérielles et sociales par lesquelles l'humanité a du passer, il est advenu qu'à diverses reprises, sur les mêmes plans ou sur des plans différents, la conscience a du reprendre le travail qu'une stagnation ou une régression avaient interrompu ou anéanti. De là enfin provient que l'esprit n'est jamais assuré définitivement de sa victoire, qu'il doit constamment faire effort pour ne pas retomber dans l'inconscience et la barbarie ; le livre se termine donc par un avertissement sévère à l'homme qui veut conserver la sagesse — « Pour faire face aux dangers qui aujourd'hui autant que jamais le menacent dans son avenir terrestre, pour ne pas avoir à recommencer son histoire, il faut donc qu'il en médite sérieusement le cours, qu'il sache transporter dans le domaine de la vie morale et de la vie religieuse cette sensibilité au vrai, défiante et délicate qui s'est développée en lui par le progrès de la science, et qui est le résultat le plus précieux et le plus rare de la philosophie occidentale... ».

Nous ne pouvons pénétrer dans les épisodes de cette histoire que le livre de M. BRUNSCHVICG nous invite à étudier ; aussi bien un compte rendu analytique terre à terre de cet ouvrage devrait-il se réduire à un commentaire de la table des matières qui n'est que le squelette abstrait que la pensée de l'auteur vient vivifier ; au lieu de résumer *les progrès de la conscience dans la philosophie occidentale*, nous avons cru qu'il était préférable d'exprimer certains aspects de l'âme qui anime ce travail. Toutefois pour donner une idée du contenu matériel du livre nous allons reproduire en appendice les principaux titres de cette table des matières.

LIVRE PREMIER. HUMANISME ET MYTHOLOGIE.

Chap. I. *La découverte de la raison pratique.* — Sect. 1. L'enseignement de SOCRATE. Sect. 2. L'œuvre de PLATON.

Chap. II. *Le réalisme physique.* — 1. ARISTOTE. 2. Le stoïcisme et l'épicurisme.

LIVRE II. LE PROBLÈME MODERNE DE LA CONSCIENCE.

Chap. III. *Le mysticisme alexandrin.* — 1. Le syncrétisme de PHILON. 2. La synthèse de PLOTIN.

Chap. IV. *Le christianisme.* — 1. Les thèmes préoccidentaux. 2. L'élaboration du dogme. 3. La transition médiévale.

Chap. V. *Le moment historique de* MONTAIGNE. — 1. Le primat du jugement. 2. Conscience et Nature.

LIVRE III. LA SPIRITUALITÉ CARTÉSIENNE.

Chap. VI. *Descartes.* — 1. Les fondements du rationalisme moderne. 2. Les conséquences pratiques du cartésianisme.

Chap. VII. *Spinoza.* — 1. Les problèmes nouveaux de la vie religieuse. 2. La théorie Spinoziste de la conscience. 3. Spinozisme et Platonisme.

Chap VIII. *Malebranche et Fénelon.* — 1. Le rationalisme catholique. 2. Les querelles de l'Église Française.

LIVRE IV. LE RETOUR A L'HUMANISME.

Chap. IX. *Locke et Bayle.* — 1. Le primat de la « conscience psychologique ». 2. Le primat de la « conscience morale ».

Chap. X. *Leibniz.* — 1. L'approfondissement de la conscience. 2. Le système de la théodicée.

Chap. XI. *Jean Jacques Rousseau.* — 1. Les incertitudes du 18ème siècle. 2. La religion de l'instinct. 3. L'apothéose du moi.

LIVRE V. L'ÉVOLUTION DE LA MÉTAPHYSIQUE ALLEMANDE.

Chap. XII. *L'idéalisme critique.* — 1. La critique de la Raison pure. 2. La philosophie pratique de KANT. 3. FICHTE avant la querelle de l'athéisme.

Chap. XIII. *La réaction romantique.* — 1. La synthèse du devenir. 2. L'inconscience du vouloir. 3. L'utilisation des thèmes romantiques.

LIVRE VI. LE DÉTERMINISME PSYCHOLOGIQUE.

Chap. XIV. *Le radicalisme philosophique de Bentham.* 1. Les précurseurs de l'utilitarisme Benthamiste. 2. L'optimiste utilitaire.

Chap. XV. *La psychologie historique de Taine.*

Chap. XVI. *Les essais de psychologie synthétique.*

LIVRE VII. LES SYNTHÈSES SOCIOLOGIQUES.

Chap. XVII. *La sociologie du progrès.* 1. MONTESQUIEU. 2. CONDORCET.

Chap. XVIII. *La sociologie de l'ordre.* 1. DE BONALD. 2. Joseph de MAISTRE.

Chap. XIX. *Synthèse dogmatique et analyse positive.* — La carrière de SAINT

SIMON. 2. La carrière d'AUGUSTE COMTE. 3. L'alternative sociologique.

LIVRE VIII. LA PHILOSOPHIE DE LA CONSCIENCE.

Chap. XX. *L'analyse réflexive*. — 1. Le traité des systèmes de CONDILLAC 2. Le mémoire de BIRAN sur la décomposition de la pensée. 3. L'embarras de l'éclectisme Biranien. 4. Biranisme et Kantisme.

Chap. XXI. *L'intuition Bergsonnienne*. — 1. Contingence et liberté. 2. La durée. 3. Instinct et intelligence.

Chap. XXII. *Les conditions du progrès spirituel*. — 1. Le sens humain de la relativité. 2. L'intelligence de l'autonomie.

Chap. XIII. *La conscience religieuse*. — 1. Le primat de la liberté. 2. La transcendance de la révélation. 3. L'immanence de la réflexion.

(*Paris*) HÉLÈNE METZGER.

Twenty Second Critical Bibliography

of the

History and Philosophy of Science and of the History of Civilization

(*to May* 1927)

This Twenty Second Bibliography contains about 1151 items, some of which have been kindly contributed by the following scholars :

T. L. Davis (Cambridge, Mass.)
Gaston Dept (Ghent)
L. Guinet (Brussels)
J. W. S. Johnsson (Copenhagen)
E. Kremers (Madison, Wisc.)
Berthold Laufer (Chicago)
C. D. Leake (Madison, Wisc.)
L. Leroux (Paris)
R. M. May (New York)
Hélène Metzger (Paris)
R. Petit (Paris)
Julius Ruska (Heidelberg)
Henry R. Viets (Boston)
H. Wieleitner (Munich)
John K. Wright (New York).

An authors' index will be found at the end. For general information on this undertaking see the Prefaces to the Sixteenth, Eighteenth, and Twenty First Bibliographies, in *Isis* VII, 171-174, 1925; VIII, 526-528, 1926; IX, 491-492, 1927.

Papers and books sent to the Editor are entered into this bibliography if they are relevant to its purpose. They may be the object of analytical notes or longer reviews, if this seems sufficiently necessary and the services of competent scholars are available. It is obvious that only a small number of publications can be adequately reviewed and that it is not even possible to give a brief description of each and every one. However, our classification is so comprehensive and so minute, that even if we do nothing but give the accurate title of an item and put it in its proper place, we are already rendering a real service to the author, the publisher and the learned public. It should also be noted that there is no relation between the importance of a publication and the length of the note devoted to it.

The ultimate aims of this undertaking are: (1) to establish the History of Science as an independent discipline; (2) to demonstrate inductively the Unity of Knowledge and the Unity of Mankind; (3) to serve as a center of information and rallying ground to the scholars engaged in our studies. We can not succeed entirely without their assistance, and

they can help us in many ways. To serve them, as well as we can, is both our duty and our pleasure. Critical work must be approached in a spirit of service or left untouched.

Harvard College Library, Room 185. GEORGE SARTON.
Cambridge, Massachusetts. *June* 14, 1927.

PART I.

Fundamental Classification (Centurial).

IXth Century B. C.

Hennig, Richard. Die Frage der Phäakeninsel im Lichte der Verkehrsgeographie. *Geographische Zeitschrift*, 31. Jahrg., p. 293-296, 1925. ISIS

Identifies the land of the Phaeacians with the region of Tartessus in southwestern Spain. J. K. W.

Hennig, Richard. Grundsätzliche Bemerkungen zur « Geographie Homers ». *Geographische Zeitschrift*, 33. Jahrg., p. 22-34. 1927. ISIS

HENNIG believes that the approach to the study of the Homeric poems exclusively through philological and archeological channels has led to too limited a conception of the geographical horizon of the Odyssey and Iliad. He argues that the epos should be interpreted from the larger point of view of historical geography and the history of civilization. J. K. W.

Hennig, Richard. Neue Betrachtungen zur Geographie Homers. *Geographische Zeitschrift*, 32. Jahrg., p. 290-296, 1926. ISIS

A brief review of recent investigations into Homeric geography. HENNIG cautions against the exaggerated enlargement of the geographical horizon of HOMER (ROBERT HERKENRATH speaks of a polar expedition undertaken by Odysseus) on the one hand as contrasted with the over-narrow views of WILHELM DÖRPFELD, who would seem to contract the whole zone of Odysseus's voyage to the immediate neighborhood of Greece. J. K. W.

Sampson, John. Fishing in HOMER. Letter to the Editor, *Times Literary Supplement*, April 7, 1927. ISIS

VIIth Century B. C.

Hertel, Johannes. Die Zeit ZOROASTERS. (*Indo-Iranische Quellen und Forschungen*, Heft 1.) 64 p. Leipzig, H. HAESSEL, 1924. ISIS

Concludes that ZOROASTER flourished c. 522 B. C. Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 733-735, 1925.

VIth Century B. C.

Brewster, Earl H. The life of GOTAMA THE BUDDHA (compiled exclusively from the Pali Canon). With an introductory note by C. A. F. RHYS DAVIDS, with frontispiece. XVIII + 243 p. (*Trubner's Oriental Series*). London, KEGAN PAUL, 1926. ISIS

Freeman, Kathleen. The work and life of SOLON. With a translation of his poems. 236 p. Cardiff, University of Wales Press Board, 1926. ISIS

Tremayne, Archibald. Records from Erech, time of CYRUS and CAMBYSES (538-521 B. C.). (*Yale Oriental Series : Babylonian Texts*, No. 7). 48 p., 74 plates. New Haven, Yale University Press, 1926. ISIS

Vth Century B. C.

Hart, J. de. Notes on the exploration of Africa among the Ancients, with special reference to HANNO. *Journal of the African Society*, 25, 264-277, 1926. ISIS

Attempted reconstruction of HANNO's voyage, which the author believes extended as far as the Gulf of Guinea (see *Geogr. Rev.*, 16, 661-662, 1926). J. K. W.

(Hippocrates). IPPOCRATE. Gli aforismi. Traduzione italiana e note di MASSIMILIANO CARDINI, con speciale riguardo ai commenti di GALENO. 120 p., con due tavole fuori testo. (*Universitas Scriptorum*, n. 12-13). Roma, Leonardo da Vinci, 1926. ISIS

A neat little volume which I hope will carry Hippocratic wisdom into many homes. G. S.

Johansen, Paul. PHIDIAS and the Parthenon sculptures. Translated by INGEBORG ANDERSEN. 134 p. Kopenhagen, Gyldendalske Boghandel Nordisk Forlag, 1925. ISIS

Reviewed by A. HEKLER, *Deutsche Literaturzeitung*, 1999-2003, 1926.

Lulofs, H. J. Over het begrip « Natuur » bij HIPPOCRATES (poging tot analyse). *Bijdragen tot de gesch. der genees.*, 6, 272-277, 1926. ISIS

The meaning of φύσις in the Hippocratic writings.

Much, Hans. HIPPOKRATES der Grosse. 162 S. Stuttgart, Hippokrates-Verlag, 1926. ISIS

Power, Sir d'Arcy. The Scamnum HIPPOCRATIS. *Proc. Roy. Soc. Med.*, 18, Sec. Hist. Med., 15-17, 1925. ISIS

A detailed account of the fracture table as described by the Hippocratic surgeon, CELSUS and PAULUS AEGINETA. H. R. V.

Sköld, Hannes. The Nirukta. Its place in old Indian literature. Its etymologies. (*Acta Reg. Societatis Humaniorum Litterarum Lundensis.* VIII.) XIV + 375 p. Lund, 1926. ISIS

IVth Century B. C. (first half)

Borchardt, Paul. PLATO's Insel Atlantis. *Petermanns Mitteilungen*, 73. Jahrg., 19-32, 3 figs., 1 pl., maps, 1927. ISIS

BORCHARDT places the center of PLATO's Atlantis in the Shott region in southern Tunis. J. K. W.

Führer, H. Über den giftigen Honig des pontischen Kleinasien. *Die Naturwissenschaften*, 1283, 1926. ISIS

An interesting footnote to XENOPHON. G. S.

Taylor, A. E. PLATO : the man and his work. XI + 522 p. London, METHUEN, 1926. ISIS

Wahl, Jean. Étude sur le Parménide de PLATON. 280 p. (*Philosophie*, No 2). F. RIEDER & Cie, Paris, 1926. ISIS

Il n'est pas d'œuvre de PLATON qui soit d'une interprétation plus difficile que le Parménide, « nœud gordien proposé aux philosophes », dont la première partie semble être une réfutation du platonisme (en réalité, elle pose le problème du platonisme), et la seconde un exercice purement logique sur les rapports de l'Un et du Multiple (elle résoud le problème posé). J. WAHL examine d'abord en soi la première partie du dialogue (pp. 14-49), puis la méthode et la portée de ce dialogue (53-108); l'examen de la deuxième partie occupe 128 p. Les notes (24 p.) sont malheureusement rejetées vers la fin du vol. qui se termine par quelques pages d'appendices se rapportant à différents passages de l'œuvre critique de WAHL, que rien ne signale, à la lecture, comme pouvant être ici complétées. L. G.

IVth Century B. C. (second half)

Bailey, Cyril. EPICURUS : the extant remains. With short critical apparatus, translation, and notes. Oxford, Clarendon Press, 1927. ISIS

Fritz, Kurt von. Quellenuntersuchungen zu Leben und Philosophie des DIOGENES VON SINOPE. (*Philologus*, Suppl. XVIII, 2.) 97 p. Leipzig, DIETERICH, 1925. ISIS

Reviewed by H. v. ARNIM, *Deutsche Literaturzeitung*, 2418-2428, 1926

Irsay, Stephen d'. La possibilité ontologique chez ARISTOTE. 12 p. *Revue Néo-Scolastique de Philosophie*, 410-421, novembre 1926. ISIS

(Kauṭilya). Arthaṣāstra of KAUṬILYA. A new edition by J. JOLLY and R. SCHMIDT. Vol. I, 47 + VI + 272 p. Vol. II, 300 p., 1924. (*The Punjab Sanskrit Series*). Lahore, the Punjab Sanskrit Book Depot, 1923, 1924. ISIS

Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 366-369, 809-810, 1925.

Montalenti, Giuseppe. Il sistema aristotelico della generazione degli animali. (Quaderni di storia della scienza, num. 7) *Rassegna di Studi Sessuali e di Eugenica*, 6, 113-139, Roma, 1926. ISIS

Müller, Reinhold F. G. Über Medizin im Arthaçâstra des KAUṬILYA. *Mitt. zur Geschichte der Medizin*, 26, 97-103, 1927. ISIS

Schnabel, Paul. KIDENAS, HIPPARCH und die Entdeckung der Präzession. *Zeitschrift für Assyrologie*, N. S., 3, 1-60, April, 1926. ISIS

« The precession of the equinoxes was first discovered before the time of HIPPARCHUS, by a Babylonian astronomer KIDINNU (sometimes written KIDENAS or CIDENAS), who directed an astronomical school at Sippra, on the Euphrates, about 343 B. C. This Babylonian achievement had been suspected for some years, but no definite conclusion had been reached, because of uncertainties relating to the interpretation of astronomical records. The final settlement of this question has become possible by the examination of some new Babylonian tables.

The fact that the astronomer NABURIANNU (about 508 B. C.) fixed the equinoctial point at 10°, and KIDINNU, about a century and a half later, at 8°, the zero point on the ecliptic being interpreted as the same in both cases, shows that KIDINNU had a knowledge of the precession of the equinoxes. A study of tables indicates that from that time on, in the ephemerides following the system of KIDINNU, the zero point on the ecliptic was shifted from time to time, to enable astronomers to retain the same angular value for the beginning of the autumnal equinoctial years. This again implies a knowledge of precession. A table (VAT 7821) prepared not later than 186 B. C., and based on the KIDINNU system, gives solar longitudes from day to day, differing by 59' 9", an amount in excess of the true average value of 59' 8" 9"'. 6 for a sidereal year, which was estimated by KIDINNU to be 365 d. 6 h. 13 m. 43 s. This excess was corrected in the table by taking on a certain day 56' 9" in place of 59' 9". Thus the computer of the table took the average daily velocity of 59' 9" to yield in the course of one year, not exactly 360°, but an additional 3'. Dividing 360° 3' by 59' 9", and allowing liberally for certain possible sources of error, SCHNABEL concludes that the year considered by the computer could not have exceeded 365 d. 5 h. 30 m. The modern value for the equinoctial

solar year is 365 d. 5 h. 48 m. 45 s. Thus the KIDINNU astronomy had two years, the sidereal and the equinoctial. KIDINNU deserves to be ranked among the greatest astronomers of ancient times. » (Reprinted from *Science*, 65, 184, 1927.) FLORIAN CAJORI.

IIIrd Century B. C. (first half)

Dobson, J. F. HEROPHILUS OF ALEXANDRIA. *Proc. Roy. Soc. Med.*, 18, Sec. Hist. Med., 19-32, 1925. ISIS

The paper consists of extracts, translated from GALEN, RUFUS, SORANUS and others, by the professor of Greek in the University of Bristol. The views of HEROPHILUS on the following topics are given in some detail : brain and nerves, liver, lungs and vascular system, sexual organs, terminology and vivisection. Each extract is referred to by volume and page, from the best editions of the various authors. The contribution of DOBSON is a sound piece of research which ought to be of great use to students of medical history. H. R. V.

Septuaginta Societatis Scientiarum Gottingensis auctoritate edidit ALFRED RAHLFS. I. Genesis. 201 p. Stuttgart, Priv. Württ. Bibelanstalt, 1926. ISIS

Reviewed by OTTO EISSFELDT, *Deutsche Literaturzeitung*, 452-453, 1927.

IIIrd Century B. C. (second half)

Bhandarkar, Devadatta Ramakrishna. Asoka. (The Carmichael Lectures, 1923). XVIII + 346 p. University of Calcutta, 1925. ISIS

Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 805-808, 1925.

IInd Century B. C. (second half)

Saussure, Léopold de (-1925). Une interpolation du Che Ki. Note complémentaire. *Journal Asiatique*, 206, 265-302, 1925. ISIS

Completing the paper published ibidem, 202, 105-135, 1922, dealing with the calendrical problems involved by the Shih-chi of SSŪ-MA CH'IEN. G. S.

Ist Century B. C. (first half)

Borchardt, Paul. Das Erdbild der Juden nach dem Buche der Jubiläen — ein Handelsstrassenproblem. *Petermanns Mitteilungen*, 71. Jahrg., 244-250, map, 1925. ISIS

The Book of Jubilees, one of the apocryphal books of the Old Testament, probably written about 100 B. C., reveals a clear conception of contemporary geography in the mind of its author. BORCHARDT believes that the latter must have been in possession of itineraries or maps. J. K. W.

(**Cleomedes**) Die Kreisbewegung der Gestirne. Uebersetzt und erläutert von Dr. ARTHUR CZWALINA. 93 S. *Ostwald's Klassiker d. exakten Wissensch.*, No. 220. Akad. Verlaggesellschaft, Leipzig, 1927. ISIS

Le *περὶ κυκλικῆς θεωρίας μετεώρων*, dont on possède maintenant une bonne édition grecque avec traduction latine très soignée, de HERMANN ZIEGLER (CLEOMEDIS De motu orbium coelestium libri duo, Leipzig, 1891) est important en raison du fait qu'il donne un « résumé très satisfaisant de la science astronomique de l'école stoïcienne » (P. TANNERY), mais à une époque qu'il est difficile de preciser : MIELI le place au milieu du 2e siècle de l'ère vulgaire, TANNERY, DUHEM, le situent au 1er siècle avant notre ère, SCHIAPARELLI, BIGOURDAN, au début de l'ère chrétienne, tandis que CZWALINA, comme A. REYMOND, MAX ARNOLD, le fait vivre au second siècle de notre ère. — Est surtout important le chapitre relatif à la mesure de la terre (pp. 33-36) où CLÉOMÈDE expose les mesures de POSIDONIOS et d'ERATOSTHÈNE : ces quelques pages constituent la seule source de renseignements tant soit peu explicites sur la question. L. G.

Gundolf, Friedrich (*pseud.*) CAESAR im neunzehnten Jahrhundert. 90 p. Berlin, GEORG BONDI, 1926. ISIS

Gundolf, Friedrich (*pseud.*) CAESAR : Geschichte seines Ruhms. 272 p. Berlin, GEORG BONDI, 1924. ISIS

Hoppe, Edmund. HERON VON ALEXANDRIA. *Hermes*, 62, 79-105, 1927. ISIS

A new attempt to date HERON's activity. The whole question is clearly restated, the author reaching the conclusion that HERON flourished c. 150-100. The argument is plausible, but is not more conclusive than some of the arguments supporting other dates. The author shows that HERON may have lived at that time; he does not and can not prove that HERON actually did so. G. S.

Paulson, Johannes. Index Lucretianus. Editio altera. VI + 180 S. Göteberg, WETTERGREN & KERBER, 1926. ISIS

Reviewed by JOH. MEWALDT, *Deutsche Literaturzeitung*, 603-605, 1927.

Ist Century B. C. (second half)

Pellati, F. VITRUVIO e le sorgenti del Nilo. *Congrès International de Géographie*, Le Caire, avril 1925, Compte rendu des travaux de la cinquième section, V, 98-103, 1926. ISIS

A passage in VITRUVIUS (De architectura, VIII, 2), which describes the Nile as rising in Mt. Atlas, thence flowing eastward under the name Nigir, and thence, after a long course through Ethiopa, appearing in Egypt near Syene under the name Nile, has been overlooked by most modern students. POMPONIUS MELA, PLINY, and later writers give the Nile this course on the

authority of King JUBA II of Mauretania, but, as VITRUVIUS antedates JUBA, the latter cannot have been responsible for the theory. It was probably derived by VITRUVIUS, MELA, and PLINY alike from VARRO who in turn may have borrowed it from the Alexandrians, the idea having probably originated in early Egyptian cosmography. J. K. W.

Ist Century (first half)

Halliday, William Reginald. The pagan background of early Christianity. IX + XVI + 334 p. Liverpool, University of Liverpool, 1925. ISIS

Kötteritzsch, Johannes Paul (b. 1892). Zahnärztliches bei AULUS CORNELIUS CELSUS. 44 p. (*Diss.*) Leipzig, 1926. ISIS

Meille, Giovanni E. CHRIST's likeness in history and art. Prefaced by S. RICCI. Translated by EMMIE M. KIRKMAN. With 200 illustrations and a coloured plate. XVI + 178 p. London, BURNS, OATES and WASHBOURNE, 1924. ISIS

Spencer, W. G. CELSUS' De Medicina. A learned and experienced practitioner upon what the art of medicine could then accomplish. *Proc. Roy. Soc. Med.*, 19, Sec. Hist. Med., 129-139, 1926. ISIS

SPENCER holds the view that CELSUS was an actual practitioner and that his book, De Medicina, could only have been written by one intimately acquainted with clinical medicine. Authors who have confuted this point of view have not taken, in SPENCER's opinion, sufficient consideration of CELSUS' limitations of knowledge, scanty acquaintance with human anatomy and erroneous views of the movement of the blood and humors, and of the brain and spinal cord as little more than marrow of bones. SPENCER's arguments are convincing. H. R. V.

Ist Century (second half)

Arnim, H. von. PLUTARCH über Dämonen und Mantik. 67 p. *Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam* Afdeeling Letterkunde, Deel 22, No 2, 1921. ISIS

Easton, Burton Scott. The Gospel according to St. LUKE; a critical and exegetical commentary. XI + 367 p. New York, SCRIBNER's Sons, 1926. ISIS

Foakes-Jackson, Frederick John. The life of SAINT PAUL, the man and the apostle. 292 p., illus., maps. New York, BONI and LIVERIGHT, 1926. ISIS

Graulich, Karl. Der Theriak des ANDROMACHOS in der Geschichte der Medizin. *Münchener Tierärztl. Wchschr.* Nr. 19, 235-237, 1926. ISIS

Taylor, Vincent. Behind the Third Gospel. A study of the proto-LUKE hypothesis. XIV + 279 p. Oxford, Clarendon Press, 1926. ISIS

IInd Century.

Van den Bergh van Eysinga, E. G. La littérature chrétienne primitive. 238 p. F. RIEDER, Paris, 1926. ISIS

L'auteur de ce travail très précis, très concis, appartient à l'école radicale hollandaise, et continue la lignée des A. D. LOMAN (1823-97), A. PIERSON (1831-96), J. VAN LOON (1838-1907), G. J. P. J. BOLLAND (1854-92), W. C. VAN MANEN (1842-1905), qui ont ouvert la voie de la critique du Nouveau Testament. Il entend par littérature chrétienne primitive tous les écrits que nous ont laissés les premiers chrétiens, qu'ils soient ou non considérés comme canoniques, jusqu'aux environs de l'an 180, date à laquelle IRÉNÉE écrit son ouvrage sur les hérésies; sous la forme où nous l'avons, toute cette littérature est du IIe S. L'auteur examine successivement les Évangiles selon MATTHIEU, MARC, LUC et le problème synoptique, les Évangiles gnostiques (CÉRINTHE, CARPOCRATE, BASILIDE, VALENTIN, MARCION), l'Évangile selon JEAN, les Agrapha, le Diatessaron de TATIEN, les Actes, les différentes Épitres, les Apocalypses, les Apologies, la Didachè; pour chaque écrit, nous avons le rappel de l'indication du contenu, des comparaisons avec les œuvres voisines, l'examen des sources possibles, et la date approximative de la composition.

L. G.

IInd Century (first half)

Bratescu, C. Dacia Si Moesia dupa PTOLEMAEU. Sec. II d. *Cr. Buletinul Societatii regale române de geografie*, 42, 5-22, 1923. ISIS

Honigmann, Ernst. Zur Geographie des PTOLEMAIOS. *Klio : Beiträge zur alten Geschichte*, 20, 202-214, 1925. ISIS

Critical review of OTTO CUNTZ, Die Geographie des PTOLEMAEUS : Galliae, Germania, Raetia, Noricum, Pannoniae, Illyricum, Italia. Berlin, 1923 (see *Isis*, 8, 533).

Moule, A. C. An ancient seismometer. *T'oung Pao*, 23, 36-39, 1924. ISIS

New translation of the extract from the Hou Han shu dealing with CHANG HÊNG's seismoscope, with notes. G. S.

IInd Century (second half)

Froehner, Reinhard. PHILUMENOS über die Tollwut. *Archiv für Wissenschaftliche und praktische Tierheilkunde*, 54, 512-518, 1926. ISIS

Rougier, Louis. CELSE, ou le conflit de la civilisation antique et du Christianisme primitif. (Les maîtres de la pensée antichrétienne, 1.) XXXIII + 440 p. Paris, Editions du Siècle, 1926. ISIS

IIIrd Century (first half)

Dio Cassius, Cocceianus. Historiarum Romanarum quae supersunt. Edidit URSULUS PHILIPPUS BOISSEVAIN. Vol. IV : Index historicus. 706 S. Berlin, WEIDMANN, 1926. ISIS

Reviewed by MATTHIAS GELZER, *Deutsche Literaturzeitung*, 12-13, 1927.

Pelliot, Paul. Les classiques gravés sur pierre sous les Wei en 240-248. *T'oung Pao*, 23, 1-4, 1924. ISIS

IIIrd Century (second half)

Caley, Earle R. The Leyden Papyrus X : an English translation with brief notes. *Journal of Chemical Education*, 3, 1149-66, 1926. ISIS

This translation is based upon the original Greek text and Latin translation as published by LEEMANS and upon the French translation of BERTHELOT. The papyrus contains one hundred and eleven recipes; seventy five of these deal with methods of purifying metals, of making alloys, of testing metals for purity, of imitating precious metals, and of coloring the surfaces of metals and of alloys; fifteen deal with methods of writing in letters of gold and silver; and eleven deal with methods of making dyes and of dyeing in purple and others colors. The last eleven recipes of the papyrus are simply short extracts from the Materia Medica of DIOSCORIDES PEDANIUS, chiefly descriptions of certains mineral. The Stockholm papyrus, of which CALEY promises an English translation, is probably the work of the same writer and appears to be the second part of a treatise of which the Leyden papyrus constitutes part one. In the latter document much space is devoted to the dyeing of cloth, to the imitating of precious stones, and to other processes which are not even mentioned in the Leyden papyrus. T. L. D.

Cumont, Franz. Le culte égyptien et le mysticisme de PLOTIN. *Monuments et mémoires publiés par l'Académie des Inscriptions*, 25, 77-92, 1921-22. ISIS

Ruddick, C. T. The circle in EUCLID's treatment of optics. *American Mathematical Monthly*, 34, 30-33, 1927. ISIS

Apropos of problems in PAPPUS's collection. G. S.

Turrière, E. Solution d'un problème de DIOPHANTE. *L'Enseignement mathématique*, 25e Année, 196-217, 1926 (1927). ISIS

« Ce travail concerne l'équation de DIOPHANTE, $x^4 + y^4 + z^4 = u^2$, en nombres indéterminés, et les formules elliptiques, avec les notations.

de WEIERSTRASS, permettant d'en obtenir des solutions dépendant de paramètres arbitraires. »

Van Hée, Louis (S. J.) Le Hai-Tao Souan-King de LIEOU. *T'oung Pao*, 20, 51-60, 1920. ISIS

Text and translation of Problem I of the Sea Island Arithmetic together with LIU HUANG's commentary. Important. G. S.

IVth Century (first half)

Chase, Wayland Johnson. The Ars Minor of DONATUS, for one thousand years the leading textbook of grammar. Translated from the Latin, with introductory sketch. 55 p. Madison, University of Wisconsin, U. S., 1926. ISIS

Lévi, Sylvain. Deux notes sur la Vimśatikā de VASUBANDHU. *Journal Asiatique*, 206, 17-35, 1925. ISIS

Oder, Eugen. APSYRTUS. Lebensbild des bedeutendsten altgriechischen Veterinärs. *Veterinärhistor. Jahrbuch*, 2, 121-136, 1926. ISIS

Palladii Rutilii Tauri Aemiliani viri illustris opus agriculturae. Liber quarter decimus de veterinaria medicina. Edidit JOSEF SVENNUNG. (*Collectio scriptorum veterum Upsaliensis*). Gotoburgi, Eranos' Förlag, 1926. ISIS

Rieck, Wilhelm. Die neuentdeckte « veterinaria medicina » des PALLADIUS. *Berliner tierärztl. Wochenschr.*, Nr. 7, 117, 1927. ISIS

(Vasubandhu). L'Abhidharmakośa de VASUBANDHU. Traduit et annoté par LOUIS DE LA VALLÉE POUSSIN. Premier et deuxième chapitre. II + 331 p. Paris, and Louvain, Société belge d'études orientales, 1923. ISIS

Reviewed by L. D. BARNETT, *Journal of the Royal Asiatic Soc.*, 299-302, 1924 and by P. DEMIÉVILLE, *Bull. de l'École française d'Extrême-Orient*, 23, 463-464, 1923.

Vetter, Quido. Quelques remarques sur le papyrus mathématique no. 621 de la Michigan Collection. *Classical Philology*, 20, 309-312, 1925. ISIS

IVth Century (second half)

Biblia sacra, iuxta Latinam Vulgatam Versionem ad codicum fidem iussi PII PP. XI cura et studio monachorum S. Benedicti Commis-

sionis Pontificiae a PIO PP. X institutae sodalium praeside AIDANO GASQUET S. R. E. Cardinale edita. Librum Genesis ex interpretatione S. HIERONYMI cum prologis variisque capitulorum seriebus adiectis prolegomenis recensuit D. HENRICUS QUENTIN monachus Solesmensis. XLVIII + 427 p. Romae, typis polyglottis Vaticanis, 1926. ISIS

Reviewed by A. v. HARNACK, *Deutsche Literaturzeitung*, 1-5, 1927.

Grevander, Sigfrid. Untersuchungen zur Sprache der Mulomedicina CHIRONIS. (*Lunds Univ. Årsskrift*, 22, 3). VIII + 162 p. Lund, GLEERUP, 1926. ISIS

Leick, Hans. Das Werk des FLAVUS VEGETIUS RENATUS : de Mulomedicina libri nach dem heutigen Stand der Wissenschaft betrachtet, unter besonderer Berücksichtigung der Chirurgie. *Münchener Tierärztl. Wchschr.* Nr. 18, 227-229, 1925. ISIS

Nemesios von Emesa Anthropologie. Übersetzt von E. ORTH, Vorwort des NIK. ALFANUS und des RICH. BURGONDIO. 121 S. Coblenz, M. MARTENTAL, 1925. ISIS

(Oribasios). Synopsis ad EUSTATHIUM; Libri ad EUNAPIUM. Edidit JOANNES RAEDER. (Corpus medicorum Graecorum VI, 3.) X + 498 p. Leipzig, TEUBNER, 1926. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Medizin*, 26, 136, 1927.

(Sallustios). Concerning the gods and the universe. Edited with prolegomena and translation by ARTHUR DARBY NOCK. CXXIII + 48 p. Cambridge, University Press, 1926. ISIS

Sigerist, Henry E. Der Bestiarius von SEXTUS PLACITUS. *Verhandl. d. Schweizer. Naturf. Gesellschaft*, II. Teil, S. 144, Aarau, 1925. ISIS

Sudhoff, Karl. Eine Wunderheilung des heil. PORPHYRIOS Bischofs von Gaza (ca. 350-421). *Mitt. zur Gesch. der Medizin*, 26, 160, 1927. ISIS

Wick, Hugo. Das Werk des FLAVUS VEGETIUS RENATUS nach dem heutigen Stande der Wissenschaft betrachtet, unter besonderer Berücksichtigung der inneren Krankheiten der Haustiere. *Münchener Tierärztl. Wochenschr.*, Nr. 13, 157, 1926. ISIS

Zeiller, Jacques. Le premier établissement des Goths chrétiens dans

l'empire d'orient. Mélanges offerts à Gustave Schlumberger, 3-12, Paris, Geuthner, 1924. ISIS

Vth Century (first half)

Bidez, J. L'historien Philostroge. Mélanges Henri Pirenne, vol. I, 23-30, Bruxelles, 1926. ISIS

Buddhaghosa). Manorathâpuranî, Buddhaghosa's commentary on the Anguttaranikâya, after the manuscript of Edmund Hardy. Edited by Max Walleser, Vol. I, Part I : « Edmund Hardy » material. VII + 458 p. London, Pali Text Society, 1924. ISIS

Reviewed by L. de la Vallée Poussin, *Journal of the Royal Asiatic Society*, 775-776, 1925.

(Buddhaghosa). Samantapâsâdikâ, Buddhaghosa's commentary on the Vinaya Piṭaka. Edited by J. Takakusu and M. Nagai. Vol. I, 284 p. London, Pali Text Society, 1924. ISIS

Reviewed by L. de la Vallée Poussin. *Journal of the Royal Asiatic Society*, 776-778, 1925.

Vth Century (second half)

Lulofs, H. J. Hoe de meteorologie begon... Fragmenten over atmospherischen neerslag bij Stobaeus. *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap*, 2d Reeks, 43, No. 1, 1-16. ISIS

VIth Century (first half)

Norlind, Arnold. Landet på andra sidan Okeanos. Ett kort kapitel om källorna till Kosmas Indikopleustes' bok om världsbyggnaden. *Ymer*, 45. Årg., 253-260, 1925. ISIS

Pelliot, Paul. Le Ts'ien Tseu Wen ou « livre des mille mots ». *T'oung Pao*, 24, 179-214, 251-253, 293, 1926. ISIS

Very elaborate study of the Ch'ien tzŭ wên apropos of the new edition of it prepared by Erich Hauer — Das Ts'ien-tze-wên in vier chinesischen Schriftformen mit einer Übersetzung. Herausgegeben und erklärt. *Mitteil. d. Sem. f. Or. Spr.*, 28,47 pages, Berlin, 1925. «L'intérêt de la présente étude est de montrer comment un texte précis, mais très concis, peut donner naissance à toute une floraison de légendes et à une succession de méprises. Une fois de plus, nous avons vu de grands lettrés chinois se tromper sur un texte parce qu'ils l'avaient lu trop vite. Et une fois de plus aussi, qui n'est pas la dernière, nous avons pu constater que les collections de l'empereur Houei-tsong, comme autographes aussi bien que comme peintures, contenaient une proportion affligeante de faux. »

VIth Century (second half)

Cook, Albert Stanburrough. AUGUSTIN's journey from Rome to Richborough. *Speculum*, 375-397, 1926. ISIS

VIIth Century (first half)

Kennedy, Pringle. Arabian society at the time of MUHAMMAD. Parts 1 and 2. VII + 253 p. Calcutta, W. THACKER, SPINK, 1926 (posthumous work). ISIS

Mookerji, Radhakumud. Harsha. (Calcutta University Readership Lectures, 1925). 204 p. (Rulers of India). Oxford, University Press, 1926. ISIS

Stein, Sir Aurel. La traversée du désert par HIUAN-TSANG en 630 ap. J.-C. *T'oung Pao*, 20, 332-354, 1921. ISIS

VIIIth Century (first half)

Goldschmidt, Günther. HELIODORS Gedicht von der Alchemie. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 21-27, 1927. ISIS

German translation of HELIODOROS's poem on alchemy previously edited by the author, HELIODORI carmina quattuor, Giessen 1923 (see SARTON's *Introduction*, I, 514). G. S.

Lex Bajuvariorum. Lichtdruckwiedergabe der Ingolstädter Handschrift des Bayerischen Volksrechts mit Transkription, Textnoten, Übersetzung, Einführung, Literaturübersicht und Glossar. Herausgeg. und bearb. von KONRAD BEYERLE. LX + 211 p. München, MAX HUEBER, 1926. ISIS

VIIIth Century (second half)

Dept, Gaston G. Le mot « clusas » dans les diplômes carolingiens. Mélanges d'Histoire offerts à HENRI PIRENNE, 89-98, 1926. ISIS

Holmyard, Eric John. An essay on JÂBIR IBN ḤAYYÂN. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht; S. 28-37, 1927. ISIS

The many questions involved in the discussion of JÂBIR's personality and works are exceedingly difficult to solve. Unlike IBN SÎNÂ, JÂBIR wrote no autobiography, but he published two lists of his writings (one complete, the other restricted to alchemy) which were known to IBN AL-NADÎM and have

been imperfectly transmitted by him. HOLMYARD gives us here a new survey of the problem taking special pains to controvert RUSKA's two main conclusions : (1) JÂBIR was a Persian from Khurasan; (2) JA'FAR AL-ṢÂDIQ, the reputed master of JÂBIR, could not have been an alchemist and therefore his supposed relation with JÂBIR is a myth. I am glad to hear that the author is preparing a complete edition of JÂBIR's Arabic works accompanied by English translations. The first fascicule is now printing, to be published by PAUL GEUTHNER, Paris. G. S.

Muccioli, Marcello. Intorno ad una memoria di GIULIO KLAPROTH sulle « conoscenze chimiche dei cinesi nell' VIII Secolo ». *Archivio di Storia della Scienza*, 7, 382-386, 1926. ISIS

Refuting a paper of JULIUS KLAPROTH in the *Mémoires de l'Académie des Sciences de St. Petersbourg*, t. 2, 476-484, 1810, dealing with the P'ing Lung Jên (Confessions of the pacific dragon), a treatise supposed to have been written in 756 by one MAO-HUA : on the basis of some extracts published by KLAPROTH, MAO-HUA was foolishly credited with the knowledge of oxygen and of the composition of water ! G. S.

Ruska, Julius. Probleme der JÂBIR-Forschung. *Der Islam*, 14, 100-104, 1925. ISIS

Ruska, Julius. Die siebzig Bücher des JÂBIR IBN ḤAYYÂN. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 38-47, 1927. ISIS

In his Chimie au Moyen Age (1893), BERTHELOT dealt with a *Liber de septuaginta translatus a Magistro* RENALDO CREMONENSI *de lapide animali* (Bibl. Nat. MS. lat. 7156) of which he recognized the Arabic origin. RUSKA has been able to obtain photographs of Arabic MSS. of that treatise (privately owned in Cairo) and on the basis of the Latin and Arabic MSS., he is giving us now a preliminary analysis of that collection : that is, he gives the titles of each of the seventy books with references to the MSS. containing them and sometimes other brief indications. I quote his conclusion : « Den Inhalt der Siebzig Bücher zu erschöpfen, die philosophischen Leitgedanken herauszuschälen, die tatsächlichen Kenntnisse und Erfahrungen, die JÂBIR in dieser Sammlung von Abhandlungen niedergelegt hat, von dem zu trennen, was uns heute als Verirrung erscheinen will, wird noch jahrelanger Arbeit bedürfen. So viel aber ist gewiss : diese Chemie kommt nicht von Ägypten durch die Syrer oder gar durch den Imam JA'FAR zu JÂBIR, sondern sie ist ein bodenständiges Gewächs, aus langer Entwicklung und in wesentlichen Stücken ein Erzeugnis des von hellenischer Philosophie befruchteten iranischen Geistes. Nicht als ob damit gesagt sein sollte, dass die christliche Syrer oder andere Bewohner des weiten Sasanidenreichs bedeutungslos gewesen wären. Aber diese neue Chemie, die unlösbar mit der Astrologie einerseits, der Medizin andererseits verknüpft ist, die als notwendiges Glied in eine grossartige Anschauung vom Zusammenhang der oberen und unteren Dinge eingegliedert ist, haben sie meiner Überzeugung noch nicht hervorgebracht. Ihre Entwicklung mit Hilfe der neuen Handschriftenfunde verstehen zu lernen, muss die Aufgabe der nächtsten Jahre sein. » G. S.

Ruska, Julius. Ueber die Quellen von GÂBIRs chemischem Wissen. *Arch. di storia d. scienza*, 7, 267-276, 1926. ISIS

IXth Century (first half)

(Aḥmad ibn Sirin). ACHMETIS Oneirocriticon recensuit FRANCISCUS DREXL. XVI + 270 p. Leipzig, TEUBNER, 1925. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Medizin*, 25, 310, 1926.

Boer, Tj. De. AL-KINDÎ, ABÛ YÛSUF YA 'QÛB B. ISḤĀQ. *Encyclopaedia of Islam*, vol. 2, 1019-1020, 1927. ISIS

This will complete the note in SARTON's *Introduction*, vol. 1, 559-560, 1927.

Ganshof, François L. EGINHARD à Gand. *Bulletin de la Société d'Histoire et d'Archéologie de Gand*, 34e année, 13-33, 1926. ISIS

Lévi-Provençal, E. La recension maghribine du Ṣaḥîḥ d'AL-BOKHARÎ. *Journal Asiatique*, 202, 209-233, 1923. ISIS

(Śankara). The Brahmasutras of BADARAYANA, with the Comment of ŚANKARACHARYA, Chapter II. Quarter I, II, edited in the original Sanskrit with notes and English translation by SHRIPAD KRISHNA BELVALKAR. 51+112+44+226 p. Poona, The Oriental Book-Agency, 1923. ISIS

Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 369, 1925.

Thompson, James Westfall. The manuscripts of EINHARD's Vita KAROLI and the matter of ROLAND. Mélanges HENRI PIRENNE, vol. II, p. 519-532, Bruxelles, 1926. ISIS

Thompson, James Westfall. The romance text of the Strassburg Oaths. Was it written in the ninth century? *Speculum*, 1, 410-438, 1926. ISIS

(Walafrid Strabo). Des WALAHFRID von der Reichenau Hortulus. Gedichte über die Kräuter seines Klostergartens vom Jahre 827. Wiedergabe des ersten Wiener Druckes vom Jahre 1510. Eingeleitet und medizinisch, botanisch und druckgeschichtlich gewürdigt von KARL SUDHOFF, H. MARZELL, E. WEIL. (*Münchener Beiträge zur Geschichte und Literatur der Naturwissenschaften und Medizin*, hsg. von E. DARMSTAEDTER, I. Sonderheft) XXIV + 24 p. facsimile. Münchner Drucke, 1926. ISIS

Elegant facsimile reproduction of the princeps, Vienna 1510, with an introduction by KARL SUDHOFF (8 p.), a botanical analysis by HEINRICH MARZELL (9 p.) and a bibliographical study (2 p.) by ERNST WEIL. G. S.

IXth Century (second half)

Baeumker, Clemens (1853-1924). Frühmittelalterliche Glossen des angeblichen Jepa zur Isagoge des PORPHYRIUS. Nach der Pariser Handschrift herausgegeben. Mit einer Einleitung von BODO SARTORIUS, Freih. von Waltershausen. 61 p. (*Beiträge zur Geschichte der Philosophie des Mittelalters*, Bd. 24, Heft 1). Münster i. W., ASCHENDORFF, 1925. ISIS

Doerries, Hermann. Zur Geschichte der Mystik; ERIGENA und der Neoplatonismus. 122 p. Tübingen, MOHR, 1925. ISIS

Sanjana, Darab Dastur Peshotan. The Dinkard. Vol. XVII, Book IX: Contents of the Gathic Nasks, Part I. Bombay, British India Press, 1922. ISIS

Reviewed by L. C. CASARTELLI, *Journal of the Royal Asiatic Soc.*, 108-111, 1924. « I note that the editor rather happily renders the title Dinkard as « the encyclopaedia of the Religion », a phrase suggested by a recent well-known publication in this country. The book is indeed encyclopaedic, though without that orderly arrangement which we are accustomed to. It is rather an agglomeration of very miscellaneous treatises, and, in fact, as I pointed out years ago, one chapter, the longest of all, is really nothing else than a complete medical treatise forming an enclave in book III. »

Xth Century (first half)

Hackin, Joseph. Formulaire sanscrit-tibétain du Xe siècle. Edité et traduit. (Mission Pelliot en Asie Centrale, Série petit in-octavo, t. II) IX + 27 + 130 p., Paris GEUTHNER, 1924. ISIS

Reviewed by P. PELLIOT, *T'oung Pao*, 24, 72-74, 1925. « Le texte étudié par M. HACKIN est une sorte de formulaire bouddhique par catégories, en sanscrit et en tibétain (le sanscrit étant aussi écrit en lettres tibétaines). Assez peu correct, il est en « ancienne langue », avec des orthographes caractéristiques comme dmyig « œil », au lieu de l'actuel mig. etc. Le sanscrit témoigne de curieux pracritismes. La rédaction est du milieu du Xe siècle, et semble devoir se placer à Sou-tcheou du Kansou, quand un maître hindou revenait d'un pélerinage au Wou-t'ai-chan du Chan-si, la montagne sacrée où le bodhisattva MAÑJUSRĪ est censé résider. »

Xth Century (second half)

(Aḥmad al-Ṭabarī). Der arabische Arzt AṬ-ṬABARĪ, Übersetzung einzelner Abschnitte aus seinen « Hippokratischen Behandlungen »,

von MOHAMED RIHAB. *Archiv für Geschichte der Medizin*, 19, 123-168, 1927. ISIS

If this important paper had appeared a little earlier, it would have obliged me to modify materially the short note devoted to AḤMAD AL-ṬABARĪ in my *Introduction* (I, 677). He was apparently an important physician who had not only made a deep study of HIPPOCRATES and GALEN but was capable of original observations. For example, he was apparently the first to observe that itch was due to a mite (see p. 134); the credit of this observation is generally given to ABŪ MARVÂN IBN ZUHR (AVENZOAR), who died two centuries later. He was a traveled man and he describes occasionally the diseases and treatments observed by him in other countries. His book is arranged in a very logical way : « Er beschreibt klar die Krankheit, ihre Ursache und geht nach der damals herrschenden Theorie der Mischungen auf die Behandlung der Ursachen ein. « Wo die Mischung im Gleichgewicht ist, ist die Gesundheit ». Er wendet Aderlass und Abführmittel an und die Medikamente werden häufig mit Essig gekocht eingenommen. Von der Behandlung mit Feuer ist er kein Freund und sagt, sie könnte in kalten Gegenden, wie Russland, erprobt werden, aber in Arabien, wo das Klima warm sei, sei sie nur zu gebrauchen, wenn kein anderer Weg übrigbleibt. Der Chirurgie ist er auch abhold und warnt vor denjenigen, die das Messer gebrauchen, ohne eine Ahnung von der Medizin zu haben. Er verspricht, auf die Chirurgie besonders zu achten und gerecht über Vorteile und Nachteile Klarheit zu schaffen. (Dieser Teil fehlt leider in der Münchner Handschrift.) Die Regeln, die der Verfasser bei jeder Behandlung befolgt, ergeben sich aus folgendem : « Es ist nicht möglich, ein krankes Organ zur Heilung zu bringen, solange die Mischung dieses Organs gestört ist. Die Krankheit bleibt, solange die Mischung gestört bleibt. Eine Wunde heilt nicht, solange die Mischung des Organs gestört ist, ein Geschwür ist dann ebensowenig zu heilen. Deshalb muss der Arzt auf die Mischung des behandelten Organs achten. Wenn das in einem Organ nötig ist, so ist es im ganzen Körper noch nötiger, z. B., wenn ein Organ verwundet ist, muss auf die Mischung des Organs geachtet werden, wenn diese aber gestört ist, muss auf die des Körpers geachtet werden, denn das Organ kommt nicht in sein Gleichgewicht, bevor die des Körpers im Gleichgewicht ist; es heilt auch eine Wunde nur, wenn die Mischung des verwundeten Organs ausgeglichen ist. » The present translation based upon the text of the Munich MS. arab. 810 (already described by JULIUS HIRSCHBERG. Geschichte der Augenheilkunde bei den Arabern, 1905, 108) is restricted to the following fragments : (1) Book 1, chapter 1. The author's reasons for writing his book; (2) Book 1, chapter 5. Mixtures; (3) Book 7. Skin diseases (therapeutic indications have been translated only insofar as they could be identified). Brief glossary. G. S.

Giles, Lionel. Chinese printing in the tenth century. *Journal of the Royal Asiatic Society*, 513-515, 1925. Note by A. C. MOULE, *ibidem*, 716, 1925. ISIS

Apropos of a block-printed paper roll (one of an edition of 84,000 copies !) which was inserted in the brickwork of the Huang-fei Padoga at Hangchow at the time of its construction in 975. On Sept. 25, 1924 that pagoda sank into a shapeless mound of bricks. All sorts of treasures are said to have been

found among the ruins. One of them, the above-mentioned paper roll is now in the British Museum. G. S.

Lowis, Douglas W. The history of the church in France A. D. 950-1000; being a study in mediaeval Christianity. 260 p. London, Epworth Press, 1926. ISIS

Markwart, Jos. Ein arabischer Bericht über die arktischen (uralischen) Länder aus dem 10. Jahrhundert. *Ungarische Jahrbücher*, 4, 261-334, 1924. ISIS

Critical text and translation of an extended commentary on a short hitherto unprinted passage, probably dating from the tenth century, in NÛRU 'D DÎN MUḤAMMAD I 'AUFI's collection of anecdotes which appeared in India in 1228. The passage was divided into three parts, the first of which described the region of Bulgar on the Volga and is related to the famous accounts of Russia by IBN FAḌLÂN and AL-IṢṬAKHRÎ. The second part is a description of the region of Jura, which corresponds to IBN BAṬṬUṬA's remarks on the land of darkness (northern Russia), «but in one important respect goes beyond this and gives the first clear description of snowshoes made of bone.» The third part describes a seafaring folk who lived either to the north or west of Jura and undertook journeys toward the North Pole. The third part bears no relation to any known text. MARKWART's commentary is extremely full, with extensive citations from Arabic authors, MARCO POLO, and other medieval travelers, and from modern publications. J. K. W.

Sudhoff, Karl. Zur Frühgeschichte Salernos. *Mitt. zur Geschichte der Medizin*, 26, 161, 1927. ISIS

Waley, Arthur. A wreath of cloud : being the third part of the Tale of Genji. Translated from the Japanese. London, ALLEN and UNWIN, 1926. ISIS

Wiedemann, E. AL-KHUDJANDÎ, HAMID B. AL-KHIḌR ABÛ MAḤMÛD. *Encyclopaedia of Islam*, vol. 2, 971, 1927. ISIS

This will supplement the note in SARTON's *Introduction*, vol. 1, 667, 1927.

XIth Century.

Porter, A. Kingsley. Pilgrimage sculpture. *American Journal of Archaeology*, 26, 1-53, ill., 1922. ISIS

« Modern art may be considered to have begun with the Byzantine renaissance of the tenth century. This outburst of artistic activity seems to have spread from the East over Europe. Before the year 1000 renewed artistic activity appears sporadically in several widely separated regions of the West. In Spain architecture rose during the tenth century to extraordinary heights; capitals were carved with surprising skill in the Rhone valley, as in the crypt of Cruas or the baptistry of Venasque ; while in Germany the Ottonian

miniatures and ivories developed types of such beauty, that they impressed indelibly the memory of the twelfth century sculptors of France, and still serve as models to artists of today. By the eleventh century, the renaissance had enflamed the entire continent of Europe. »

XIth Century (first half)

(**al-Baihaqî**). RESCHER, O. Index und Stellennachweise zu Fr. SCHWALLY's BAIHAQÎ-Ausgabe. (Giessen, TÖPELMANN, 1902). IV + 20 p. Stuttgart, Printed for the author, 1923. ISIS

Hermannsson, Halldór. The Wineland voyages : a few suggestions. *Geographical Review*, 17, 107-114, 1 sketch map, 1927. ISIS

(**Ibn Ṭâhir al-Baghdâdî**). An abridgement of AL-BAGHDÂDÎ's characteristics of Muslim Sects (al-farq bayn al-firaq), by 'ABDU 'L-RAZZÂQ AL- RAS'ANÎ. Edited by Professor PHILIP K. HITTI. 205 p. Cairo, Hilal Press, 1924. ISIS

Reviewed by R. A. NICHOLSON in *J. R. A. S.*, 542, 1925 and by GAUDEFROY-DEMOMBYNES in *Journal Asiatique*, 206, 186, 1925.

Mac Donald, A. J. LANFRANC, a study of his life, work, and writing. VIII + 307 p. London, MILFORD, 1926. ISIS

Reviewed by ALFRED H. SWEET, *American Historical Review*, 32, 91-92, 1926.

XIth Century (second half)

Alfaric, Prosper et Hoepffner, Ernest. La chanson de Sainte-Foy. Tome I, fac-similé du manuscrit et texte critique, introduction et commentaire philologiques, par E. HOEPFFNER ; tome II, traduction française et sources latines, introduction et commentaire historiques par P. ALFARIC. (*Publications de la Faculté des Lettres de l'Université de Strasbourg*, fasc. 32 et 33). VI + 376 p., 12 pl.; VI + 206 p., 4 pl., 1926. ISIS

Reviewed by MARC BLOCH, *Revue de Synthèse Historique*, 42, 143-146, 1926.

Bacot, Jacques. Le poète tibétain MILARÉPA. Ses crimes, ses épreuves, son nirvâna. Traduit du tibétain avec une introduction et un index. Quarante bois de JEAN BUHOT d'après une iconographie tibétaine de la Vie de MILARÉPA. (*Les Classiques de l'Orient*). 302 p. Paris, Editions BOSSARD, 1925. ISIS

MILARÉPA, magicien, poète et ermite vécut au XI^e^ siècle. Son histoire fut écrite au XII^e^ siècle par son disciple RETCHUNG PA. Il en existe plusieurs

éditions tibétaines, et elle fut traduite en mongol et peut être aussi en chinois. On la trouve souvent accompagnée des chants de MILARÉPA (traduits par BERTHOLD LAUFER en 1901 et 1902). Les illustrations de ce volume ont été copiées d'après trois peintures tibétaines de la collection de l'auteur. G. S.

(**al-Ghazzâlî**). Erlaubtes und verbotenes Gut. (HANS BAUER, Islamische Ethik, III.) Das 14. Buch von AL-GHAZZÂLÎ's Hauptwerk der Religionswissenschaften, übers. u. erläutert von HANS BAUER. X + 212 p. Halle, NIEMEYER, 1922. ISIS

Reviewed by R. HARTMANN, *Der Islam*, 14, 140-142, 1925.

Jenkins, Thomas Atkinson (*editor*). La Chanson de Roland, Oxford version. Notes and glossary. CL + 378 p: Boston, HEATH, 1924. ISIS

Reviewed by J. D. M. FORD, *Speculum*, 2, 92-104, 1927.

(**Nâṣir-i-Khusraw**). The Safar-Nâma. 538 p. Berlin, Kâwayanî Press, 1921-22. ISIS

Reviewed by R. P. DEWHURST, *Journal of the Royal Asiatic Society*, 325, 1925. See *Isis*, 9, 501.

Obermann, J. Der philosophische und religiöse Subjektivismus GHAZÂLÎS. Ein Beitrag zum Problem der Religion. Wien, W. BRAUMÜLLER, 1921. ISIS

Reviewed by H. H. SCHAEDER, *Der Islam*, 13, 121-132, 1923.

Saliba, Djémil. Étude sur la métaphysique d'AVICENNE. XXVI + 216 p. *Thèse*. Les presses universitaires, Paris, 1926. ISIS

Les travaux quelque peu récents en langue française sur AVICENNE sont très peu nombreux : A. F. MEHREN a surtout traduit et commenté, de 1887 à 1899 ses traités mystiques. CARRA DE VAUX lui a consacré tout un volume (*Avicenne*, VIII + 304 p., ALCAN, 1900), où la métaphysique occupe relativement peu de place ; dans ses *Penseurs de l'Islam* (*Isis*, 5, 165-7 ; 7, 272 ; 8, 598), une page (263) du T. II est consacrée à la médecine d'AVICENNE, et au T. IV (pp. 18-42), l'auteur envisage surtout la physique et l'algèbre philosophique. Or c'est précisément la métaphysique qui forme le pivot et le principal objet du sytème d'IBN SÎNÂ ; elle est exposée dans *al-Chifa*, et résumée dans *al-Nadjat*. CARRA DE VAUX s'est servi uniquement de ce résumé, très fidèle d'ailleurs, mais où manquent quelques détails qui ont précisément paru les plus intéressants à DJÉMIL SALIBA. Le *Chifa* embrasse l'ensemble des branches de la philosophie du temps d'AVICENNE, logique, mathématiques, physique et métaphysique, la seule partie à laquelle s'intéresse ici l'auteur qui situe la philosophie d'AVICENNE « un néoplatonisme mélangé des éléments mystiques parvenus de l'Orient » dans la philosophie arabe en général, et d'une façon plus particulière, par rapport aux motekallemîn. L. G.

(**Somadeva**). The Ocean of Story. Being C. H. TAWNEY's translation

of SOMADEVA's Katha Sarit Sagara. Edited by M. N. PENZER. Vol. II, Foreword by Sir GEORGE GRIERSON. XXII + 375 p. London, CHAS. J. SAWYER, 1924. ISIS

Reviewed by R. C. TEMPLE, *Journal of the Royal Asiatic Society*, 339-343, 1925.

Weir, Thomas Hunter. OMAR KHAYYAM, the poet. (Wisdom of the East Series.) 95 p. London, JOHN MURRAY, 1926. ISIS

XIIth Century.

Baesecke, Georg. REINHART FUCHS. Das älteste deutsche Tierepos aus der Sprache des 12. Jahrhunderts in unsere übertragen. VI + 70 p. Halle a. S., M. NIEMEYER, 1926. ISIS

Reviewed by ANTON WALLNER, *Deutsche Literaturzeitung*, 2475-2477, 1926.

XIIth Century (first half)

Bell, Alexander (*editor*). Le Lai d'HAVELOC : and Gaimar's Haveloc episode. 268 p. Manchester, University Press, 1925. ISIS

(Gundisalvi, Dominicus). Des DOMINICUS GUNDISSALINUS Schrift « von dem Hervorgange der Welt » (De processione mundi). Herausgegeben und auf ihre Quellen untersucht von GEORG BÜLOW. XXVI + 60 p. (*Beiträge zur Geschichte der Philosophie des Mittelalters*, Bd. 24, Heft 3). Münster i. W., ASCHENDORFF, 1925. ISIS

Haskins, Charles H. An early Bolognese formulary. Mélanges Henri PIRENNE, vol. 1, p. 201-210, Bruxelles, 1926. ISIS

« The history of the *ars dictaminis* in the XIIth century is not yet entirely clear. In a general way it is established that the earliest known master of this new art was ALBERIC OF MONTE CASSINO in the late XIth century; that it was soon transplanted to Bologna, which became its principal Italian centre; and that some time in the course of the XIIth century it was carried to France, where it flourished chiefly at Orleans in the time of PHILIP AUGUSTUS. Many of the treatises and accompanying forms of letters, however, still remain to be explored, for their historical as well as their rhetorical content; and in the course of a systematic examination of those of Italian origin I have come on one which illustrates curiously the general development and throws some light upon the schools of Bologna and their earliest identifiable master of *dictamen*, ALBERT OF SAMARIA. »

Lefebvre des Noettes, Ct. La tapisserie de Bayeux, datée par l'examen technique de sa cavalerie. *Larousse Mensuel*, 7, 358-360, illustr., 1927. ISIS

« On n'est pas d'accord sur la date de la Tapisserie de Bayeux. L'examen paléographique de ses inscriptions et l'interprétation des scènes qu'elle retrace n'ont en effet fourni jusqu'ici que des arguments peu probants; si bien que certaines monographies la situent vers 1070, d'autres vers 1180. La marge, on le voit, est de plus d'un siècle. Sans prendre part à la controverse sur les points étudiés déjà, mais en vain, c'est à la cavalerie, largement représentée sur la longue bande, que nous demanderons un complément d'information..... Tout compte fait de ses indices, nous sommes porté à conclure que le document célèbre appartient au deuxième quart du XII^e siècle, et à proposer la date de 1130 environ. » (cfr. *Isis*, 3, 323).

Ullmann, Max (August) (1895-). Geflügel, Eier, Fische, Früchte und Gemüse im Circa instans des Codex Salernitanus in Breslau. 26 p. (*Diss.*) Leipzig, 1926. ISIS

XIIth Century (second half)

Dept, Gaston G. Les marchands flamands et le roi d'Angleterre. *Revue du Nord*, 12, 303-324, 1926. ISIS

(Maimonides). Fuehrer der Unschluessigen (Guide of the preplexed, translated into German, with explanatory notes). By ADOLF WEISS. Vols. I-III. Leipzig, FELIX MEINER, 1923-24. ISIS

Reviewed by M. GASTER, *Journal of the Royal Asiatic Society*, 730-731, 1925.

(Maimonides). Sefer moreh nebukim (Führer der Verirrten). Mit den Kommentaren SEMTOB, EFODI, IBN CRESQAS, DON ISHAQ ABRABANEL. 423, 419 S. Berlin, B. KAHAN, 1925. ISIS

Philpot, Joseph Henry. Maistre WACE. A pioneer in two literatures. 155 p. London, METHUEN, 1925. ISIS

XIIIth Century (first half)

Ahrens, W. Die « magische Quadrate » AL-BÛNÎ's. *Der Islam*, 12, 157-177, 1922; 14, 104-110, 1925. ISIS

Baeumker, Clemens. Contra Amaurianos. Ein anonymer, wahrscheinlich dem GARNERIUS VON ROCHEFORT zugehöriger Traktat gegen die Amalrikaner aus dem Anfang des XIII. Jahrhunderts. Mit Nachrichten über die übrigen unedierten Werke des GARNERIUS. (*Beiträge zur Geschichte der Philosophie des Mittelalters*, Bd. 24, Heft 5-6). LVIII + 51 p. Münster i. W., ASCHENDORFF, 1926. ISIS

Kratchkovsky, Ign. Angebliche Autographe des Geschichtsschreibers KAMÂL AL-DÎN IBN AL-'ADÎM in Leningrad. *Der Islam*, 15, 334, 1926. ISIS

This KAMÂL AL-DÎN is the famous historian of Aleppo and calligraphist, born c. 1192, died 1262. G. S.

Leclère, Léon. La Grande Charte de 1215 est-elle une « illusion » ? Mélanges HENRI PIRENNE, vol. I, p. 279-290, Bruxelles, 1926. ISIS

Miller, William. Trebizond, the last Greek empire. v + 139 p. London, Soc. for Promoting Christian Knowledge, 1926. ISIS

Reviewed by PERCY ERNST SCHRAMM, *Deutsche Literaturzeitung*, 272-274, 1927.

Paetow, John Louis. Morale scolarium of JOHN OF GARLAND (JOHANNES DE GARLANDIA). *Memoirs of the University of California*, Vol. 4, No. 2, Berkeley, 1927. ISIS

Excellent critical edition, together with abundant glosses derived from the MSS., of this *Morale scolarium* which JOHN OF GARLAND wrote in 1241 to reform the morals of the Parisian students, and incidentally their Latin. The author (professor of medieval history at the University of California) has added an English paraphrase and a very elaborate introduction wherein the facts of GARLAND's life are clearly discussed and his works described. This was the more useful in that JOHN OF GARLAND has been confused with many other writers. According to PAETOW, JOHN was born in England c. 1195, studied at Oxford under JOHN OF LONDON c. 1210-13, came to France c. 1217 and spent the rest of his life in Paris, except for three years (1229-32) in Toulouse; he was probably still living in 1272. The *Morale scolarium* (662 verses) is a very valuable source for the study of college life in the Middle Ages. In spite of many grammatical and lexicographic digressions it is more precious than the Manuale scholarium which depicts student life in Heidelberg c. 1480 (see R. F. SEYBOLT's translation, Cambridge, Mass., 1921; *Isis*, 4, 407) or the PSEUDO-BOETHIUS *De disciplina scolarium*, a work of the beginning of the XIIIth century of which JEAN PORCHER is preparing a critical edition. To give our readers an idea of the contents of GARLAND's treatise, I quote the headings of a few chapters : 1. A plea for morality and the liberal arts; 2. A plea for urbanity and religion ; 9. Concerning table manners; 14. Advise to read worthy books rather than certain useless modern works. Praise for the Chancellor; 23. The chapter defends the Pope against the accusation of simony; 31. Aromatic drugs should not be taken to excess because they foul the mouth; 35. The laws of nature are subverted by the wicked; 36. Conclusion of the work and the courtliness of the Blessed Virgin Mary. G. S.

Salvatorelli, Luigi. Vita di SAN FRANCESCO D'ASSISI. Bari, LATERZA, 1926.

ISIS

Schneider, Arthur. ALBERTUS MAGNUS, sein Leben und seine wissenschaftliche Bedeutung. Rektoratsrede vom 6. November 1926. 38 S. Köln, 1927. ISIS

Strunz, Franz. ALBERTUS MAGNUS. Weisheit und Naturforschung im Mittelalter. (Menschen, Völker, Zeiten. Hrsg. von M. KEMMERICH, Bd. 15). 189 S., 3 Faksimile, 35 Abb. Wien, KARL KÖNIG, 1926. ISIS

« ALBERTS Meisterschaft liegt in der grossartigen Zusammenfassung, in der Synthese der Erkenntnisse des ARISTOTELES und seiner Zeit zu einem System von eigenartiger Harmonie und Symbolik. Der Inbegriff der lehrhaften Überzeugungen des Mittelalters samt dem Glaubensinhalte der kirchlichen Tradition kommt in ihm zum Ausdruck. Dabei ist ALBERT überall original, selbst wo er zu kopieren scheint. » Diese eigenen Worte des Verf. (S. 50) kennzeichnen den Inhalt des aus ersten und den besten zweiten Quellen erarbeiteten Buches sehr gut. Die Unterabteilungen sind etwas gross. Insbes. hätte das lange Kapitel über die praktische Naturforschung des ALBERTUS einer Unterteilung bedurft. Es sind gute Verzeichnisse beigegeben. Die Ausstattung ist vorzüglich. H. W.

Wiedemann, Eilhard. Über die Abbildung einer Affenführers und seiner Affen bei AL-JAZARÎ. *Der Islam*, 13, 107-108, 1923. ISIS

XIIIth Century (second half)

Balic, C. Quelques précisions fournies par la tradition manuscrite sur la vie, les œuvres et l'attitude doctrinale de JEAN DUNS SCOT. *Revue d'histoire ecclésiastique*, 22, 551-566, 1926. ISIS

Bonvalot, Gabriel. Les chercheurs de routes : MARCO POLO. (Voyages). 254 p., cartes, illust. Paris, Les éditions G. CRÈS et cie, 1924. ISIS

Light and pleasantly written popular study aiming to give the broader historical setting of MARCO POLO's exploit—commerce as an incentive to travel in early times, the development of commercial contacts with the Orient, the causes and results of the Latin conquest of Constantinople in 1204 — rather than a detailed narrative of POLO's journeys. J. K. W.

Clement, Ad. Sur l'indication de la composition de la poudre à feu chez ROGER BACON. *Arch. di storia d. scienza*, 7, 4-5, 1926. ISIS

Contrairement à H. KOPP : Geschichte der Chemie, IV, p. 226, l'auteur trouve chez ROGER BACON : Theatrum chimicum, V, p. 861 (ed. 1622), l'indication de la composition de la poudre à canon. Il rétablit le texte que brouille la cryptographie de BACON. L. G.

Ehrle, Kardinal Fr. (S. J.) NIKOLAUS TRIVET (c. 1258 - c. 1328). Sein Leben, seine Quolibet und Quaestiones ordinariae. *Beiträge*

zur Geschichte der Philosophie des Mittelalters, Supplementband II, p. 1-63. Münster i. W., 1923. ISIS

Epstein, (Rabbi) Isidore. The « responsa » of Rabbi SOLOMON BEN ADRETH of Barcelona (1235-1310), as a source of the history of Spain. Studies in the communal life of the Jews in Spain as reflected in the « Responsa ». X + 122 p. London, KEGAN PAUL, 1925. ISIS

Ferckel, Christoph. THOMAS VON CHANTIMPRÉ über die Metalle. *Studien zur Geschichte der Chemie*. Festgabe E. O. v. LIPPMANN dargebracht, S. 75-80, 1927. ISIS

Grabmann, Martin. Die Kulturphilosophie des Hl. THOMAS VON AQUIN. 217 p. Augsburg, BENNO FILSER, 1925. ISIS

Reviewed by LUDWIG BAUR, *Deutsche Literaturzeitung*, 300-302, 1927.

Grabmann, Martin. Die logischen Schriften des NIKOLAUS VON PARIS (Clm. 14460 und Vat. lat. 3011) und ihre Stellung in der aristotelischen Bewegung des 13. Jahrhunderts. *Beiträge zur Geschichte der Philosophie des Mittelalters*, Supplementband II, p. 119-146. Münster i. W., 1923. ISIS

Hauberg, Poul. En middelalderlig dansk laegebog. (A medieval Danish medical tract). 102 p. Kobenhavn, HENRIK KOPPEL, 1927. ISIS

This tract is almost unknown and exists only as a manuscript, dating from the middle of the XVth century (Royal Library at Copenhagen, Thott's collection no. 249, in 8°), but having its origin at least 150 years earlier. It is inserted in a collective tome together with a lapidary and a copy of HARPESTRENGS herbal. The editor demonstrates that this Danish manuscript is derived from a German manuscript, also a collective one, which has possibly contained the *Practica* of BARTHOLOMAEUS SALERNITANUS, different minor tracts by unknown authors and the Low-German tract *Die dudesche Arstedie*. Following up the text in the Danisch manuscript line by line, the author can state that it has nothing to do with HARPESTRENG, but was compiled from a great many different sources, mainly the *Practica* and the *Arstedie*. This book, written in collaboration with Dr. MARIUS KRISTENSEN, our best connoisseur of old Danish, is an important contribution to the study of early Scandinavian science. J. W. S. JOHNSSON.

Jansen, Bernhard (S. J.) PETRUS DE TRABIBUS. Seine spekulative Eigenart oder sein Verhältnis zu Olivi. *Beiträge zur Geschichte der Philosophie des Mittelalters*, Supplementband II, p. 243-254, Münster i. W., 1923. ISIS

Komroff, Manuel, *editor*. The travels of MARCO POLO (the Venetian).

XXXIV + 370 p. New York, BONI & LIVERIGHT, 1926. ISIS

This translation, based on WILLIAM MARSDEN's English version of 1818, follows the order of chapters of Sir HENRY YULE's translation. Footnotes are reduced to a minimum, the purpose of the editor having been to produce a text acceptable to the general reader. J. K. W.

Lowe, W. R. L., and Jacob, E. F. Illustrations to the life of ST. ALBAN in Trinity college Dublin ms. E. i. 40. Reproduced in collotype facsimile. With a description of the illustrations by MONTAGUE RHODES JAMES. 39 p. Oxford, Clarendon Press, 1924. ISIS

« The man who versified the legend, and who most probably drew the pictures — who at the very least designed them and supervised the drawing of them — is the greatest of medieval English historians and the glory of St. Albans Abbey, MATTHEW PARIS. That he wrote with his own hand the text of the French legend and the rubrics which explain the pictures is also probable. » (M. R. JAMES).

Luyckx, Bonifaz Anton. Die Erkenntnislehre BONAVENTURAS; nach den Quellen dargestellt. XXIV + 306 p. (*Beiträge zur Geschichte des Mittelalters*, Bd. 23, Heft 3-4). Münster i. W., 1923. ISIS

Montgomery, James Alan. The history of YABALLAHA III, Nestorian patriarch, and of his vicar BAR SAUMA, Mongol ambassador to the Frankish courts at the end of the thirteenth century. Translated from the Syriac and annotated. (*Records of Civilization : Sources and Studies*). 82 p. New York, Columbia University Press, 1927. ISIS

This very important text describes the journeys of two Chinese Nestorians who, starting from Peking, crossed China and Central Asia, following essentially the same road as MARCO POLO, but in the opposite direction, and reached Bagdad. The younger of them, MARCOS BAINIEL, born in 1244, became Nestorian patriarch in 1281 under the name of YABALLAHA III; he died in 1317; the older, BAR SAUMA, was sent by the Ilkhan ARGHUN in 1287 to Rome to bespeak an alliance against the Saracens. BAR SAUMA arrived in Rome in the summer of 1287, being the first Chinese to reach the Latin West. He kept a diary in Persian, which has come down to us in an abbreviated Syriac translation. The Syriac text was published by PAUL BEDJAN in 1888, and again, better, in 1895; an excellent French translation was given by J. B. CHABOT in the *Revue de l'Orient latin* (1893, 1894). « The present translator has limited his task to the first half of the biography (99 out of 205 printed pages), namely, the portion that gives the early history of the two Chinese monks, their pilgrimage to Western Asia, their settlement and ecclesiastical elevation there, and SAUMA's mission to the West, terminating with the latter's death in 1293 and the accession of King GHAZAN in 1295. » The complete work continues the story down to the year 1317, explaining the vicissitudes suffered by the Christians after the Mongols had finally cast their lot with Islam. The translator has added very well documented accounts of the diplomatic relations between the Mongols and the Latin

Christians, and of the Nestorian church. This is a very valuable publication.
G. S.

Rosenmöller, Bernhard. Religiöse Erkenntnis nach BONAVENTURA, XIII + 224 p. (*Beiträge zur Geschichte der Philosophie des Mittelalters.* Bd. 25, H. 3-4). Münster i. W., 1925. ISIS

(Rubruquis, William) Der Bericht des Franziskaners WILHELM VON RUBRUCK über seine Reise in das Innere Asiens in den Jahren 1253-1255, hrg. von HERMANN HERBST. Leipzig, Griffel-Verlag, 1926. ISIS

Spettmann, Hieronymus. Der Ethikkommentar des JOHANNES PECHAM. *Beiträge zur Geschichte der Philosophie des Mittelalters*, Supplementband 2, p. 221-242, Münster i. W., 1923. ISIS

XIVth Century.

Darmstaedter, Ernst. Liber claritatis totius alkimiae artis als deren autor « GEBER » genannt wird. (Bologna, Cod. Lat. 164 (153)). Liber I, cap. 11-27. *Arch. di storia d. scienza*, 7, 257-266, 1926; 8, 95-103, 214-226, 1927. ISIS

Suite et fin de la publication précédemment annoncée (*Isis*, 9, 153).

Gask, G. E. The medical staff of King EDWARD THE THIRD. *Proc. Soc. Med.*, 19, Sec. Hist. Med., 1-16, 1926. ISIS

The names of four physicians who served EDWARD III can be found in the official documents of the period : Master PANCIUS DE CONTRONE, King's physician, fl. 1317-1338; Master JORDAN OF CANTERBURY, King's physician, fl. 1326-1360; Master ROGER DE HEYTON, King's surgeon, 1328, died 1349; Master ADAM ROUS, King's surgeon, 1359, died 1379. EDWARD III reigned from 1327 to 1377. Mr. GASK has carefully investigated the records, details of which he gives in an appendix to his paper. None of the physicians left any medical writings or personal records. They received many grants from the King, but we have no way of estimating their worth as doctors, nor can we tell from such scanty data anything in regard to their methods of practice. These men have not previously been mentioned in medical histories.
H. R. V.

Temple, Sir Richard Carnac (*editor*) The word of LALLA THE PROPHETESS. Done into English verse from the Lalla-Vakyani or Lal-Wakhi and annotated. XIII + 292 p. Cambridge, University Press, 1924. ISIS

Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 566-567, 1925.

Willard, James Field. Inland transportation in England during the fourteenth century. *Speculum*, 1, 361-374, 1926. ISIS

XIVth Century (first half)

Asín Palacios, Miguel. La escatologia musulmana en la Divina Comedia. Discurso leido en el acto de su recepción (en la Real Academia española) y contestación de JULIAN RIBERA TARRAGÓ el dia 26 de enero de 1919. 403 p. Madrid, 1919. ISIS

Reviewed by WERNER MULERTT, *Der Islam*, 14, 114-122, 1925.

Asín Palacios, Miguel. Islam and the Divine Comedy. Translated and abridged by HAROLD SUNDERLAND. XXV + 295 p. London, MURRAY, 1926. ISIS

Reviewed by S. UDNY, *American Historical Review*, 32, 93-96, 1926.

Cordier, Henri (*editor*). Les Merveilles de l'Asie par le père JOURDAIN CATALANI DE SÉVÉRAC de l'ordre des frères prêcheurs, évêque de Columbum (XIVe siècle). Texte latin, fac-simile et traduction française avec introduction et notes. 125 p., 19 facs. Paris, Librairie Orientaliste P. GEUTHNER, 1925. ISIS

JORDANUS OF SÉVÉRAC was one of a group of Franciscan missionaries who endeavored to introduce Christianity in India early in the fourteenth century and in 1329 was made Bishop of Quilon (in Travancore). JORDANUS' book, the *Mirabilia descripta*, was edited by Sir HENRY YULE for the Hakluyt Society in 1863. The present volume, however, consists of a photographic reproduction of a manuscript that was not known to YULE, the Latin text, and a French translation with a careful introduction and very full notes by the late editor of YULE's *Marco Polo*. J. K. W.

Dinânah, Taha. Die Schrift von ABI JA'FAR AḤMED IBN 'ALÎ IBN MOḤAMMED IBN 'ALÎ IBN KHÂTIMAH aus Almeriah über die Pest. *Archiv für Geschichte der Medizin*, 19, 27-81, 1927. ISIS

Partial translation of a very important Arabic treatise dealing with the plague which occured in Almeria, Andalusia, in 1348 (MS. Escorial 1785). There are three Arabic treatises on the plague of that time : the one which is here translated, another by IBN AL-KHAṬÎB (second half of XIVth century) and a third by ABÎ 'ABDILLÂH IBN ' ALÎ AL-LAQMÎ AL-SHAKÛRÎ. The second text, a compact account, carefully thought out, of the plague of Granada was translated into German by MARCUS JOSEPH MÜLLER and published by the Bavarian Academy in 1862. The first text is the most elaborate. The greatest part of it, i. e. the medical part, is here translated; the rest, of purely theological interest, is left out. The author, IBN KHÂTIMAH, was an Andalusian theologian, a friend and correspondent of IBN AL-KHAṬÎB, who speaks of him very highly in his biographical collection *al-Iḥâtah*. IBN KHÂTIMAH's treatise on the plague is a well written summary of contemporaneous know-

ledge, containing also some personal observations. Its value lies chiefly in the fact that it was written while the plague was raging, in the winter of 1348-1349. It is one of the very earliest decriptions of the Black Death. Only three other plague treatises were composed before : The *Epistola* de MAESTRE JACME D'AGRAMONT, a Spanish document dated Avril 24, 1348 (of which I understand that A. C. KLEBS is preparing an edition), the *Consilium* of GENTILE DA FOLIGNO and the *Compendium de epidemia* per collegium facultatis medicorum Parisiis ordinatum, published in October 1348. The last named treatise, being an official publication of the Paris Faculty, made a deep impression; yet it is of little medical interest, it is distinctly a scholastic production. IBN KHÂTIMAH's is by far the best of these earliest plague tracts. The medical part here translated is divided as follows : 1. Wesen der Pest; 2. Allgemeine und spezielle Ursachen ; 3. Weshalb befiel die Pest gewisse Leute, verschonte andere trotz enger Nachbarschaft?; 4. Die Ansteckung; 5. Vorbeugung, Verhütung; 6. Therapie. G. S.

(**Eckhart, Meister**, c. 1260-1327). Eine lateinische Rechtfertigungsschrift des MEISTER ECKHART. Mit einem Geleitwort von CLEMENS BAEUMKER, herausgegeben von P. AUGUSTINUS DANIELS, O. S. B. (1864-1920). XIX + 66 p. Mit einer Tafel. (*Beiträge zur Geschichte der Philosophie des Mittelalters*, Bd. 23, Heft 5). Münster i. W., ASCHENDORFF, 1923. ISIS

Gunther, R. T. RICHARD OF WALLINGFORD and his rectangulus. *Nature*, 118, 773-774, 1926. ISIS

Heldmann, Karl. Hausrezepte und Gesundheitsregeln aus dem Chorherrenstift S. Peter zu Fritzlar v. J. 1436. *Archiv für Geschichte der Medizin*, 19, 103-104, 1927. ISIS

Karrer, Otto (*editor*). MEISTER ECKEHART; das System seiner religiösen Lehre und Lebensweisheit. Textbuch aus den gedruckten und ungedruckten Quellen mit Einführung. 379 p. plates and facsimiles. München, JOSEF MÜLLER, 1926. ISIS

Reviewed by GÜNTHER MÜLLER, *Deutsche Literaturzeitung*, 595-602, 1927.

Moule, A. C. A life of ODORIC OF PORDENONE. *T'oung Pao*, 20, 275-290, 1921. ISIS

Moule, A. C. A small contribution to the study of the bibliography of ODORIC. *T'oung Pao*, 20, 301-322, 1921. ISIS

Omont, H. Un guide du pèlerin en Terre sainte au XIVe siècle. Mélanges offerts à GUSTAVE SCHLUMBERGER, 436-450, Paris, GEUTHNER, 1924. ISIS

Sagher, Henry-E. de. L'immigration des tisserands flamands et brabançons en Angleterre sous EDOUARD III. Mélanges HENRI PIRENNE, vol. I, p. 109-126, Bruxelles, 1926. ISIS

Thompson, Daniel Varney, Jr. Liber de coloribus : addenda and corrigenda. *Speculum*, I, 448-450, 1926. ISIS

See *Isis*, 9, 505. The script of the MS. suggests an earlier date (c. 1300) than aforesaid; it is probably of English rather than French origin. G. S.

Wickersheimer, Ernest. Les accusations d'empoisonnement portées pendant la première moitié du XIV^e^ siècle contre les lépreux et les Juifs; leurs relations avec les épidémies de peste. Communication faite au quatrième congrès international d'histoire de la médecine (Bruxelles, avril, 1923) 8 p. Anvers, Imprimerie de Vlijt, 1927. ISIS

Wickersheimer, Ernest. Anatomies de MONDINO DEI LUZZI et de GUIDO DE VIGEVANO. (Documents scientifiques du XV^e^ siècle; t. 3). 92 p., 16 pl., Paris, E. DROZ, 1926 (not seen). ISIS

Zéki Pacha, Ahmed. Une seconde tentative des Musulmans pour découvrir l'Amérique. *Bulletin de l'Institut d'Égypte*, 2, 57-59, Le Caire, 1920. ISIS

La première tentative est celle des Arabes de Lisbonne racontée par IDRÎSÎ. Il s'agit ici d'une tentative d'un roitelet de Guinée, MUHAMMAD GAO, tentative racontée par son successeur au moment de son passage au Caire en 1324. Ce récit fut rapporté par l'encyclopédiste IBN FAḌLALLÂH AL-'UMARÎ (première moitié du XIV^e^ siècle). Le sultan aurait dit aux explorateurs en partance : « Ne revenez pas avant d'avoir atteint l'extrême limite de l'Océan à moins que vos provisions et votre eau ne soient épuisées. » Une seule embarcation réapparut, et rendit compte du désastre qui avait anéanti les autres. Le sultan fit ensuite préparer 20000 (?) bâteaux, dont la moitié était destinée au transport de provisions et d'eau douce. Il n'est jamais revenu. G. S.

XIVth Century (second half)

Bloedner, August (Eduard) (1880-). Das Secretarium practicae medicinae des JOHANNES JACOBI von Montpellier. 34 p. (*Diss.*) Leipzig, 1926. ISIS

This JOHANNES JACOBI, first mentioned in 1360, was elected chancellor of Montpellier in 1364. He and his rival JEAN DE TOURNEMIRE attended URBAN V in Avignon in 1372; in 1378, JOHANNES was appointed royal physician to CHARLES V. THE WISE; in 1384 he attended CLEMENT VII in Avignon; he died in the same year. He wrote a *Secretarium practicae medicinae* (c. 1378); *Recepte*; *Tractatus de calculis in vesica* edited by E. WICKERSHEIMER (1910); *Tractatus de pestilencia* (c. 1373), which was extremely popular, being the origin of the plague tracts ascribed to CANUTUS (*Isis*, 9, 431 f.). The present

work is devoted to an analysis of the *Secretarium*. This elaborate compilation was based chiefly upon the *Passionarius* of GARIOPONTUS (first half of XIth century, *Introduction*, I, 726). BLOEDNER indicates its contents and discusses its sources, reaching the conclusion that personal experience was hardly one of them. G. S.

Lazzarini, Vittorio. I libri, gli argenti, le vesti di GIOVANNI DONDI dall' Orologio. *Bollettino del Museo Civico di Padova*. 1. 28 p., 1925 (not seen). ISIS

Lint, J. G. de. Instrumentafbeeldingen in handschriften van GUY DE CHAULIAC. *Bijdr. tot de geschied. der geneeskunde*, 7, 117-142, 27 fig., 1927. ISIS

Manly, John Matthews. Some new light on CHAUCER. (Lectures delivered at the Lowell Institute). XI + 305 p., plates and portrait. New York, HENRY HOLT, 1926. ISIS

The portrait is a reproduction in color of the SEDDON portrait, now in the Treasure Room of the Harvard College library.

Owst, Gerald Robert. Preaching in Medieval England; an introduction to sermon manuscripts of the period, c. 1350-1450. (*Cambridge studies in medieval life and thought*). XVIII + 381 p., illus. Cambridge, University Press, 1926. ISIS

Reviewed by ALFRED H. SWEET, *American Historical Review*, 32, 305-306, 1927.

Tatlock, John S. P., and **Kennedy, Arthur, G.** A concordance to the complete works of GEOFFREY CHAUCER and to the Romaunt of the Rose. XIII + 1111 p. Washington, D. C., Carnegie Institution 1927. ISIS

It is not necessary to explain the meaning and usefulness of this work to the readers of *Isis*. It will suffice to say that this Concordance is based on the « Globe » edition of CHAUCER's works, prepared by ALFRED W. POLLARD, H. FRANK HEATH, MARK H. LIDDELL, W. S. MCCORMICK (MACMILLAN 1898; reissued in 1913). « This was used, rather than one of Professor SKEAT's, the only other complete editions in the present generation, because its text is rather more conservative, and in some parts is based on a larger number of MSS. » « All works contained in the Globe edition have been included, and no others. This means all works in SKEAT's six-volume edition (his smaller Student's CHAUCER contains all the works recognized by the concordance, and no others) except the last two of the three lyrics which he printed at the beginning of his fourth volume; these two, which he entitled *Complaint to my Mortal Foe* and *Complaint to my Lode-sterre*, are disregarded as showing no particular evidence of authenticity, less even than the *Balade of Compleynt*. The first of the three, which he called *Womanly Noblesse* and

the Globe editor *Balade that Chaucier Made*, they seem to have been justified in including. Certain later sections in the *Astrolabe*, marked by SKEAT «Supplementary Propositions », are not in the Globe edition and are disregarded here. The chief question was as to the translation of *Le Roman de la Rose*, but was not difficult to decide. This could not be wholly omitted, and there was no satisfactory alternative short of wholly including it. It may seem odd to print words from its certainly non-Chaucerian portions among CHAUCER's words, but the inclusion suggestively exhibits the likenesses and unlikenesses of the two vocabularies. Students of CHAUCER are aware of the spuriousness of at least the middle part of the work and the doubt as to any of it, and other readers are sufficiently warned by the title-page and this introduction. » The history of this great undertaking is explained on p. x to XIII. It was originally planned by the Chaucer Society, founded in 1868, and this means that it was inspired by FREDERICK JAMES FURNIVALL (1825-1910). An enormous amount of preliminary work was done by EWALD FLÜGEL (1863-1914), but at the time of his death it was found that he had been working on too large a scale; the full publication of the work as planned by him would have required five or six volumes the size of the present work. FLÜGEL's manuscript has been transferred in 1925 to Cornell University to be used for the newly projected dictionary of Middle English. G. S.

Workman, Herbert Brook. JOHN WYCLIF; a study of the English medieval church. 2 vols. XL + 342 p.; XII + 436 p., plates and portraits. Oxford, Clarendon Press, 1926. ISIS

Reviewed by ALFRED H. SWEET, *American Historical Review*, 32, 581-583, 1927.

Zuretti, Carlo Oreste. Alcuni capitoli di un « manuale chemicum » greco. Con traduzione. *Studien zur Geschichte der Chemie*, Festgabe E. O. v. LIPPMANN dargebracht, S. 55-74, 1927. ISIS

Apropos of the Vatic. gr. 1134, written at Oppido Mamertino (near Reggio Calabria) in 1376 (see description in Cat. des mss. alchimiques grecs, II, 153). « L'autore del trattato procede in modo rigorosamente sistematico, almeno per une notevole sezione del Manuale, che si può considerare risultante di due parti, vale a dire : A — trattazione sistematica dei sei corpi o metalli, dei quattro spiriti, dei lithoi, degli hálata, degli élea, degli hýdata ecc. fino al capitolo LXXXVI (i capitoli LXXXIV — LXXXVI sono però anch'essi aggiuntivi); B- additamenta, cioè capitoli desunti da Maistro PRUGREZI, da LUCIATO, da ARNALDO DI VILLANOVA, da autore o autori non indicati, dal conte di SANTA FLORA (o Santo Flore), da autore or autori non indicati — venti capitoli — cinquanta capitoli. Nel Manuale domina lo spirito pratico; chè il compilatore di esso vuole insegnare i procedimenti, e li espone in forma concisa, breve e chiara, senza digressioni, senza infiltragioni di misticismo e senza esaltazione della propria arte, senza nemmeno darsi l'aria di rivelare continuamente grandi e misteriosi segreti (di *μυστήριων* e di cosa che sia *ἔγκρυφος* si parla di rado), contenendo in strettissimi confini la parte teorica, la quale si limita a breve introduzione generale, a brevissime premesse alle singole parti, a pochissime parole all'inizio delle singole trattazioni dei corpi, degli spiriti ecc.) L'autore procede raccogliendo da varie parti. Ciò

risulta dall'indice stesso premesso al ms.; ed il procedimento risulta da tutta l'opera ed anche da taluno dei capitoli, che qui vengono pubblicati : si deve anzi dire essere sistematica la ricerca di più di un metodo per i singoli procedimenti, il che non esclude la scelta e la eliminazione fra i materiali onde disponeva. » Follows extracts from the Greek and Latin texts, printed upon parallel columns, for comparison. G. S.

XVth Century (first half)

(**Chelcicky, Petr**). Sít víry, 1521. (Impression facsimile de l'édition originale tchèque du Filet de la Foi, 1521), 4 feuillets non numérotés et 236 feuillets numérotés en chiffres romains. (Bohemiae Monumenta Typographica) Prague, Taussig et Taussig, 1926. 100 exemplaires ; Kč. 600). ISIS

Le Filet de la Foi est l'œuvre maîtresse du grand réformateur bohême, PIERRE CHELČICKÝ (ainsi nommé d'après le village de Chelcice, près de Volňany), qui naquit vers 1390 et mourut entre 1455 et 1457. Fermier de petite noblesse et laïque, PIERRE ignorait le latin. Il vécut à Prague en 1419 et 1420. Il se tint éloigné des guerres hussites, étant convaincu que le commandement « Tu ne tueras point » est absolument inviolable et que toute guerre est mauvaise. Son activité littéraire commença vers 1414; il écrivit exclusivement en tchèque. Le Filet de la Foi (l'image du titre est inspirée par LUC, V, 4-6) fut rédigé en 1441-43. Il y défend la thèse que le pouvoir temporel de l'Église est une cause de perdition, et que l'État et l'Église devraient être radicalement séparés. En cela, CHELČICKÝ se montrait plus intransigeant que WICLEF qui admettait encore une possibilité de coopération. Il avait été fortement influencé par JEAN HUS et par les mouvements vaudois et taborites. Les idées de CHELČICKÝ inspirèrent une nouvelle secte nommée l'Unité des Frères bohêmes. Toutefois il arriva à cette secte ce qui est arrivé à toutes les autres. Après la mort du maître et lorsque les premiers enthousiasmes furent refroidis, la doctrine fut graduellement édulcorée, et le nombre des intransigeants diminua peu à peu. Vers 1495, le parti de l'Unité primitive était déjà en minorité, et fut dès lors appelé le Petit Parti. Le Filet de la Foi fut imprimé pour la première fois le 31 octobre 1521 dans le monastère de Vilémov, ancien monastère bénédictin dont les utraquistes s'étaient emparés en 1421 et qui était affilié au Petit Parti. Il n'existe que trois exemplaires de cette première édition, tous trois à Prague et tous trois incomplets. Le facsimile basé sur deux de ces exemplaires est complet. Il est accompagné d'une introduction en tchèque par ZDENEK V. TOBOLKA avec traduction française. G. S.

Cortesão, Jaime. O âmbito da obra do Infante. *Boletim da Agencia Géral das Colónias*, Ano 11, No. 10, 3-15, 1926. ISIS

CORTESÃO quotes documents showing that the captains sent out by Prince HENRY THE NAVIGATOR not only reached the Sierra Leone coast, hitherto supposed to be their farthest limit, but penetrated to the entrance of the Gulf of Guinea. J. K. W.

De Toni, Ettore. Il Libro dei Semplici di BENEDETTO RINIO. *Memorie*

della Pontificia Accad. delle Scienze, Nuovi Lincei, 5, 171-278; 7, 275-398; 8, 123-264, 1919-1925. ISIS

Herbal edited from a MS. of the Bibl. Marciana in Venice. The work was composed by the physician BENEDETTO RINIO (established in Venice in 1415), and illustrated by the painter ANDREA AMADIO. RUSKIN was enthusiastic over these illustrations and had many of them copied for him. See elaborate review by ACHILLE FORTI in *Rivista di storia delle scienze* (1926, 294-300). G. S.

Gomme, Allan. Early British patent grants. *Nature*, 119, 494, 1927. ISIS

« The researches of Mr. HULME and others have brought to light a large number of earlier grants, mostly by ELIZABETH and JAMES I., but including one (that to JOHN OF UTYNAM for the making of coloured glass) so early as 1449, and it is to this one that the distinction of priority must for the moment be given. »

XVth Century (second half)

Almagià, Roberto. Una carta attribuita a CRISTOFORO COLOMBO. *Rendiconti della Classe di Scienze morali, storiche e filologiche, Reale Accademia Nazionale dei Lincei*, ser. VI, fasc. 11-12, p. 749-773, Rome, 1925. ISIS

A further discussion of the portolan chart in the Bibliothèque Nationale in Paris believed by CHARLES DE LA RONCIÈRE to have been prepared under the direction of COLUMBUS (See *Isis*, 8, 168-173, 726, 748). DE LA RONCIÈRE's main argument was based on the similarity in the wording of some of the legends on the chart to certain marginal notes in COLUMBUS's hand in the latter's edition of PIERRE D'AILLY's *Imago Mundi*. ALMAGIÀ, however, suggests that this does not necessarily mean any more than that COLUMBUS possessed the chart itself, or one like it, and copied or paraphrased its legends into his copy of the *Imago Mundi*. This would easily explain the similarity in wording without rendering it necessary for us to conclude that the chart was drawn by COLUMBUS or that it expresses anything not hitherto known in regard to his geographical ideas. ALMAGIÀ thinks it possible that the chart under discussion was one of the charts to which COLUMBUS refers elsewhere in his marginal notations in the *Imago mundi*. J. K. W.

Almagià, Roberto. Questioni Colombiane. (Estratto dalla Rivista Colombo). 13 p. Rome, 1926. ISIS

A brief discussion of recent studies relating to COLUMBUS. The author points out that during the last twenty or thirty years not much new material of primary importance and bearing directly on the voyages has appeared. On the other hand, light has been shed on the scientific and geographical knowledge of the period in particular relation to COLUMBUS. The greater part of the article is a discussion of G. E. NUNN's The Geographical Conceptions of Columbus, New York, 1924 (See *Isis*, 7, 541-542). J. K. W.

Aurner, Nellie Slayton. Caxton : mirrour of fifteenth-century letters. A study of the literature of the first English press. XVI + 304 p., illus. London, ALLAN, 1926. ISIS

Basmadjian, K. J. Le système quadrilataire et l'opothérapie chez AMIRDOVLAT. *Bull. de la Soc. fr. d'hist. de la Méd.*, 20, 355, 1926. ISIS

Birkenmajer, Ludwik Antoni. MIKOLAJ WODKA z Kwidzyna zwany ABSTEMIUS. Lekarz i astronom polski XV-go stulecia. 163 p. Torun, Nakladem Towarzystwa Naukowego w Toruniu, 1926. ISIS

MIKOLAJ WODKA (Nicolaus Gregorii de Quedzino; alias ABSTEMIUS) naquit vers 1442; il étudia à la cathédrale de Wloclawek (Vladislavia), en Cujavie, puis à l'Université de Cracovie. C'est pendant son séjour à Cracovie, en 1464, qu'il écrivit son *Calendarium cyclicum* qui contient des éléments de gnomonique. Vers 1468 il se rendit à l'Université de Pressbourg (Posonium), en Hongrie, où il obtint son M. A. et fit la connaissance de REGIOMONTANUS. En 1476, il est à Bologne; dès 1479 il y enseigne l'astronomie avec GIROLAMO MANFREDI; en 1480 il y obtient le M. D. Il est probable qu'il séjourna aussi à Urbino, à la cour de FRÉDÉRIC DE MONTEFELTRE, où il rencontra PAUL DE MIDDELBOURG et fra LUCA PACCIOLI. En 1482 il exerce la profession médicale à Poznań; en 1488 il fut adjoint en qualité de « chanoine-médecin » au chapitre de Wloclawek. C'est alors qu'il fut en contact avec le jeune COPERNIC dont il fut le premier maitre d'astronomie. La cadran solaire conservé jusqu'à nos jours sur le mur sud de la cathédrale de Wloclawek (voir 2 pl.) fut construit en 1490 par WODKA et son élève COPERNIC. Maitre WODKA fut en rapports avec les personnalités principales de la Renaissance polonaise. Il mourut en 1494. Il écrivit au moins cinq traités d'astronomie ou d'astrologie, dont l'auteur nous donne ici quelques extraits. G. S.

Bonhoff, Friedrich. Ein Hildesheimer Chirurgensiegel des Mittelalters. Mit einer Abbildung. *Alt Hildesheim*, Heft 6, 10-12, Westermanns Verlag, 1925.

(Chiromantia). Die Kunst Chiromantia, die Älteste als Blockbuch gedruckte Handlesekunst. 46 Tafeln. München, Verlag der Münchner Drucke, 1926. ISIS

Cortesão, Jaime. Le traité de Tordesillas et la découverte de l'Amérique. (Communication lue au XXII[e] Congrès International des Américanistes, Rome 1926) 50 p. Lisbonne, Imprimerie de la Bibliothèque Nationale, 1926. ISIS

« A la lumière de la politique de JEAN II, qui visait le monopole de l'Orient, et de la science nautique et cosmographique des Portugais, tellement basée sur l'étude et l'expérience, les négociations qui conduisent au traité de Tordesillas représentent un dangereux non-sens, de la part du roi portugais, si nous n'admettons pas qu'il défendait la possession de terres à l'occident

sur lesquelles il avait une connaissance expérimentale. Au contraire, cette connaissance admise, les négociations s'éclairent d'une vive lumière et atteignent aussitôt un sens et un enchainement logique. »

Devonshire, Henriette C. (Mrs. R. L.). Relation d'un voyage du Sultan QAITBAI en Palestine et en Syrie (1477-78), traduit de l'Arabe. Extrait du *Bulletin de l'Institut Français d'Archéologie Orientale*, t. 20 Le Caire, 1921. ISIS

Reviewed by D. S. MARGOLIOUTH, *Journal of the Royal Asiatic Soc.* 117, 1924.

Friederici, Georg. Der Charakter der Entdeckung und Eroberung Amerikas durch die Europäer. Erster Band. XIII + 579 p. Stuttgart, PERTHES, 1925. ISIS

Reviewed by E. L. STEVENSON, *American Historical Review*, 32, 126-127, 1926.

Heidingsfelder. Georg. Das Opusculum « De passionibus animae » DIONYS' des Kartäusers (gest. 1471). *Beiträge zur Geschichte der Philosophie des Mittelalters*, Supplementband 2, p. 252-269, Münster i. W., 1923. ISIS

Hommel, Fritz. Zu den Quellen der ältesten Kräuterbücher. TSCHIRSCH Festschrift, S. 72-79, Leipzig, TAUCHNITZ, 1926. ISIS

Jaeger, Adolf. Der Nürnberger Rechenmeister ULRICH WAGNER, der Verfasser des ersten gedruckten deutschen Rechenbuches. *Mitt. zur Geschichte der Medizin*, 26, 1-5, 1927. ISIS

Laborde, comte A. de. Un manuscrit de MARIANUS TACCOLA, revenu de Constantinople. Mélanges offerts à GUSTAVE SCHLUMBERGER, 494-505, Paris, GEUTHNER, 1924. ISIS

A propos du MS. lat. 7239 de la Bibliothèque Nationale. «Il semble de l'examen de ces différents documents qu'il y ait eu deux séries du traité de JACOPO MARIANO, une en allemand et l'autre en italien, et que cette dernière contient quelquefois la préface de SANTINI. C'est en 1449 que JACOPO MARIANO TACCOLA, de la ville de Sienne, écrivit son ouvrage *De machinis libri X*, traité important de génie militaire. Il avait sans doute étudié l'*Epitoma rei militaris* de VÉGÈCE et ne pouvait manquer de connaître l'ouvrage sur l'art militaire en XII livres de son contemporain JACOPO VALTURIO, qui, avant 1468, avait dédié son travail à SIGISMUNDO PANDOLFO MALATESTA et qui mérita l'inscription qu'on lui a consacrée dans le Tempio di S. Francesco di Rimini. »

Larsen, Henning. An old Icelandic medical manuscript. *Annals of Medical History*, 9, 60-73, 1927. ISIS

This is MS. 23 D 43 of the Royal Irish Academy, Dublin. The title reads : « Here begins the leechbook of THORLEIF BJÖRNSSON. » A THORLEIF BJÖRNSSON was governor of Iceland, under the Norwegian Crown Council, from 1481 to 1486, and in 1480 he had been made lay brother of Munkeliv Monastery in Bergen, Norway, one of the greatest centers of learning in Norway at that time. I believe, then, that the medical manuscript was prepared for THORLEIF BJÖRNSSON by Icelandic scribes who secured much of their material from the monks at Munkeliv in Norway. » Contents : 1. Charms and conjurations against hemorrhages, fevers. 2. A brief chapter on the depth of the sea (the only part of the manuscript not dealing with medicine or related subjects). 3. A book of simples and their efficacy (i.e., uncompounded medicines, chiefly herbs, but with not a few mineral and animal substances). 4. An antidotarium (i.e., book of compound medicines). 5. A lapidary (on the medical use of gems). 6. A leechbook (or possibly parts of two) listing ailments and their treatment. Though now almost obliterated in an accretion of folk remedies and through constant addition and rearrangement, there is evident back of the whole the original anatomical arrangement « from head to foot ». 7. A cookbook. This can possibly be considered of medical importance though it contains none of the standard rules on dietetics found in many of the medical manuscripts of the time. »

The MS. is described, analyzed, and extracts translated and discussed. The author is preparing a full edition with English translation. I quote his conclusion : « The importance of the Dublin manuscript is not a revelation of new forms of medical practice or medical theory; it is rather that this manuscript enables us to see the progress of the dissemination of the Continental learning even in the remotest regions of the North and that it underscores once more the wonderful power and vitality of the School of Salerno. And, from the more specific Scandinavian standpoint, it reveals once more the close contact of the North with everything that was being done on the Continent. We have already in the literature of Iceland ample proof of the interest of the Icelander in the romance and story, in the theology and the metaphysics, in the travel and the adventures of the Continent, but the discovery of the Dublin manuscript gives us a fuller proof than we have yet had of how closely the Icelander followed also the scientific knowledge and its immediate application to the art of healing. » G. S.

Meyer, Karl H. Die Fahrt des ATHANASIUS NIKITIN über die drei Meere. Reise eines russischen Kaufmannes nach Ostindien 1466-1472. Aus dem Altrussischen übersetzt, mit Einleitung, Anmerkungen und einer Kartenskizze versehen. 47 p. (*Quellen und Aufsätze zur russischen Geschichte*, 2). Leipzig, PAUL SCHRAEPLER. (no date, 1926?). ISIS

This is I believe the first European translation of this very interesting Russian text. The three seas mentioned in the title are the Caspian, Arabian and Black Seas. ATHANASIUS started from Tver in 1466, went down the Volga and across the Caspian Sea and Persia reaching the Persian Gulf, then by water, Diu and Cambay and finally Bidar (in Hyderabad). On his way back, after crossing Persia, he returned by way of Tabriz and the Black Sea, reaching Smolensk in 1472. A scientific edition of this text in English would be very desirable. (An English version appeared as early as 1857 in R. H. MAJOR : India in the XVth century). G. S.

Rossi, Ettore. Una carta nautica arabia inedita di IBRÂHÎM AL-MURSÎ datata 865 Egira = 1461 dopo Christo. Congrès International de Géographie du Caire, avril 1925, Compte rendu des travaux de la cinquième section, V., 90-95, 1 map, 1926. ISIS

The marine chart here described and photographically reproduced (on a much reduced scale) shows the Mediterranean and the Atlantic coasts of Europe as far north as the British Isles. It is the work of a physician of Tripoli, and is obviously based on Italian prototypes, resembling the map of the Genoese, ALBINO CANEPA, 1480.

ROSSI asserts that, while it is true that the « Arabs » (Moslems) have developed a distinctive school of marine cartography, there nevertheless existed in the 15th and 16th centuries in north Africa an « Arab cartographic tradition which imitated the Italian and Catalan schools. » The work of the map makers of Tunis, Sfax, and Tripoli showed « a certain care for precision and originality, especially in the use of place names in countries inhabited by Arabs or by peoples of Arab culture. » J. K. W.

Ruppel, A. (*editor*). GUTENBERG-Festschrift zur Feier des 25. jährigen Bestehens des Gutenberg-Museums in Mainz. XVI + 448 S., 50 Tafeln, 12 Sonderbeilagen, 4° m. zahlr. Text-Abb. Mainz, Verlag der Gutenberg-Gesellschaft, 1925. ISIS

Sigerist, Henry E. L'origine della sifilide. *Arch. di storia d. scienza*, 7, 243-255, 1926. ISIS

Dans cette conférence faite au troisième congrès national de la Société italienne pour l'étude des questions sexuelles, tenu à Turin du 30 mai au 2 juin 1925, l'auteur s'élève une fois de plus contre la théorie américaine de l'origine de la syphilis. L. G.

Stein, Henri. La date de naissance d'OLIVIER DE LA MARCHE (1422). Mélanges HENRI PIRENNE, vol. II, p. 461-464, Bruxelles, 1926. ISIS

Struik, D. J. WILLEM GILLISZ. van Wissekerke. *Mededeelingen van het Nederlandsch historisch Instituut te Rome*, 6, 109-122, 1296. ISIS

Apropos of a small book (26 l.), the *Liber desideratus super celestium motuum indagatione sine calculo*. The Dutchman WILLEM GILLISZ. of Wissekerke (Zealand), wrote it in 1494 being then in Carpentras (near Avignon). It is the description of a planetarium. It was printed at Cremona in 1494 (Gesamtkatalog, I, nos. 263, 264, 1925). The treatise is analyzed, extracts are quoted and the few biographical data relative to its author are set forth. G. S.

Thorndike, Lynn. The *De Constitutione Mundi* of JOHN MICHAEL ALBERT of Carrara. *The Romanic Review*, 17, 193-216, 1926. ISIS

« A scientific treatise of the second half of the fifteenth century which has hitherto passed well-nigh unnoticed is the *De constitutione mundi* of JOHN MICHAEL ALBERT of Carrara. The work is of interest not merely as

one further specimen of fairly ample proportions — for it covers some 146 leaves in manuscript — of the scientific, or the would-be scientific, thought of that time, but on account of its particularly close relations to the earlier works of RISTORO D'AREZZO and PAUL OF VENICE on the same subject. It further contains some valuable allusions to, and citations of, other authors of the preceding medieval centuries. Indeed, it is not of importance for new ideas or scientific progress, but rather for its backwardness and apparent failure to keep *au courant* with practical advance that was being made in scientific knowledge. On the other hand, it discusses such matters as demons, incantations, magic images, astrology, and alchemy with considerable fulness. Its attitude to religion and theology is also very suggestive as to the state of opinion in the closing fifteenth century »..... It may serve « to illustrate the weakness of natural science in Italy of the fifteenth century, and to support DUHEM's general conclusion that the physics and astronomy of Italy in the later middle ages were inferior to those of the University of Paris in the first half of the fourteenth century ».

JOHN MICHAEL ALBERT (1438-1490) wrote various other works on historical and philosophical subjets, notably one *De origine omnium scientiarum* inspired by AL-FĀRĀBĪ. THORNDIKE analyses the *De constitutione mundi*, illustrating its backwardness in almost every respect. G. S.

Thorndike, Lynn. LIPPUS BRANDOLINUS *de comparatione reipublicae et regni* : an unpublished treatise of the late fifteenth century in comparative political science. *Political Science Quarterly*, 41, 413-435, 1926. ISIS

LIPPO BRANDOLINI (d. 1497) — alias AURELIUS BRANDOLINUS — was one of those Italian humanists who were attracted to Hungary by MATTHIAS CORVINUS. On his return from Hungary to Florence he became a member of the Augustinian Order and a preacher of renown. His treatise (Laurent. Plut. 77, cod. 11) dedicated to a Medici suggests comparison with *Il Principe* of MACHIAVELLI dedicated to another Medici a few years later. However it is not Machiavellian in tone, but it attracts our attention because of its concreteness. The argument is based upon a comparison of the kingdom of Hungary with the constitution of Florence. G. S.

Wickersheimer, Ernest. Maitre JEAN GISPADEN, chirurgien annécien et grenoblois de la fin du XV^e^ siècle. Ses dessins à la plume (anatomie, instruments de chirurgie). Communication faite au V^e^ Congrès, International d'Histoire de la Médecine. 12 p., 6 pl. Genève, ALBERT KUNDIG, 1926. ISIS

Wickersheimer, Ernest. La syphilis à Genève à la fin du XV^e^ siècle. Communication faite au V^e^ Congrès International d'Histoire de la Médecine. 4 p. Genève, ALBERT KUNDIG, 1926. ISIS

Leonardo da Vinci.

Bilancioni, Guglielmo. LEONARDO DA VINCI e la lingua del picchio. *Riv. d. sc. med. e natur.*, 17, 221-230, 1926. ISIS

Cette note est surtout constituée par le rappel des notions qu'avaient de la langue du pic C. GESNER, U. ALDROVANDI et BUFFON. L. G.

XVIth Century (whole and first half)

A. — *Mathematics.*

Bortolotti, Ettore. I contributi del TARTAGLIA, del CARDANO, del FERRARI, e della scuola matematica bolognese alla teoria algebrica delle equazioni cubiche. 54 p. (*Studi e memorie per la storia dell' Università di Bologna*, vol. 9). Imola, 1926. ISIS

Bortolotti, Ettore. Il primo fra i quesiti proposti dal FERRARI al TARTAGLIA nel suo 3° Cartello di matematica disfida, e la inscrizione nel cerchio dei poligoni regolari di 7 e di 9 lati. (*Rendiconto delle Sessioni della R. Accademia delle Scienze dell'Istituto di Bologna*, Anno 1925-26. 12 p. Bologna, 1926. ISIS

Bortolotti, Ettore. Sulla scoperta della risoluzione algebrica delle equazioni del quarto grado. *Periodico di Matematiche*, 6, 217-230, 1926. ISIS

The practical application of LUDOVICO FERRARI's rule, to solve biquadratic equations, implied the solution of a complete cubic equation. FERRARI and CARDANO showed how to eliminate the quadratic factor from the cubic equation, and the thus simplified equation was solved by SCIPIONE DAL FERRO and later by TARTAGLIA. G. S.

Wieleitner, Heinrich. Über CARDANO Beweis für die Lösung der kubischen Gleichung. *Sitzungsberichten der Physikalisch-medizinischen Sozietät zu Erlangen*, 58/59, 173-176, 1926/27. ISIS

B. — *Physical sciences and Technology.*

Darmstaedter, Ernst. Berg-, Probir- und Kunstbüchlein. Mit Bibliographie und 12 Abbildungen. (*Münchener Beiträge zur Geschichte und Literatur der Naturwissenschaften und Medizin*, Heft 2/3). 111 p. München, Münchner Drucke, 1926. ISIS

A very interesting study, prepared with considerable care, chiefly from the bibliographical point of view. Much less attention was paid in medieval times to mineralogy and mining than to botany and agriculture. Leaving aside lapidaries, (*Isis*, 9, 123-124), which contained very little scientific

information, there was no medieval treatise on practical mineralogy (minerals, ores, mining). The *de mineralibus* of ALBERT THE GREAT can not be counted as such. This may be partly ascribed to the fact that while gardening and agriculture were popular and public occupations, the profession of mining was somewhat secret, mysterious, and of ill repute. Scholars did not care to enquire about it, except ALBERT THE GREAT who did not fear to visit the *loca metallica* as well as the alchemical laboratories. Thus the medieval encyclopedias, for example the *Speculum naturale* of VINCENT OF BEAUVAIS and even the *Margarita philosophica* of GREGOR REISCH (1503), are almost silent on the subject. Some information on mining in the XIIIth and XIVth centuries can be derived from archival documents, but for a regular treatise, however humble, we have to wait until the beginning of the XVIth century. It is significant that the two earliest authors, RÜLEIN OF KALBE and GEORG AGRICOLA were physicians, mining physicians. RÜLEIN was the town physician and mayor of Freiberg. His *Bergbüchlein* (c. 1505) was the first German treatise on the subject. This was followed, c. 1518, by the earliest *Probirbüchlein*, often reprinted, the first treatise on assaying. A third type of work was represented by the *Kunstbüchlein* (1535) and its predecessors : collections of technical and medical recipes. The works of AGRICOLA, by far the most important of all, are too well known to need further examination here, but DARMSTAEDTER has rendered us a great service by his analysis of other contemporary publications which help us to understand the birth of mineralogical and geological literature. Abundant bibliographical descriptions with analyses of contents and facsimiles. G. S.

Darmstaedter, Ernst. GEORG AGRICOLA (1494-1555). Leben und Werk. (*Münchener Beiträge zur Geschichte und Literatur der Naturwissenschaften und Medizin*, Heft 1.) 96 p., 12 fig. München, Münchner Drucke, 1926. ISIS

After quoting GOETHE's encomium of AGRICOLA (in his study on the Theory of Colors) the editor adds « Dieser, auch von GOETHE so klar und schön hervorgehobenen Bedeutung AGRICOLAS will ich hier dadurch gerecht werden, dass ich ein Bild von seinem Schaffen gebe, und zwar durch die Besprechung seiner Werke und Anschauungen, die auch seine Stellung in der Geschichte der Wissenschaft zeigt, — ausschliesslich auf Grund von AGRICOLAS Schriften selbst. Das rein Persönliche, das schon in früheren Veröffentlichungen, z. B. in der von R. HOFMANN (Gotha 1905), genügend behandelt wurde, berühre ich dagegen nur kurz. Der bibliographische Teil wurde, entsprechend dem Plane dieser Beiträge, verhältnismässig ausführlich bearbeitet, durch Benützung der erreichbaren Originalausgaben, der Kataloge des British Museum zu London und der Bibliothèque Nationale zu Paris und schliesslich auf Grund freundlicher Mitteilungen einer Anzahl von Persönlichkeiten und Bibliotheken, denen ich auch hier aufrichtigen Dank ausspreche. » Contents : Einleitung. AGRICOLAS Leben. AGRICOLAS Werke. Bermanus. De ortu et causis subterraneorum. De natura eorum quae effluunt ex terra. De natura fossilium. De veteribus et novis metallis. Technisches Wörterbuch. De animantibus subterraneis. De re metallica. De mensuris et ponderibus. De externis mensuris et ponderibus. De mensuris quibus intervalla metimur. De restituendis ponderibus atque mensuris. De precio metallorum et monetis libri tres. Libellus de prima ac simplici institutione

grammatica. De bello adversus Turcam suscipiendo. De peste libri tres. Bibliographie. Literatur. By far the longest section (26 p.) is devoted, as we would expect, to the De re metallica. This is a carefully made summary, elegantly published. G. S.

Sudhoff, Karl. Hat wirklich PARACELSUS die Tabula Smaragdina ins Deutsche übersetzt ? *Mitt. zur Geschichte der Medizin*, 26, 163, 1927. ISIS

A footnote to JULIUS RUSKA's study reviewed in *Isis* 9, 375-7. Concluding that the German translation of the Emerald Table was not made by PARACELSUS. G. S.

Sudhoff, Karl. VALERIUS CORDUS, der Äther und THEOPHRAST VON HOHENHEIM. TSCHIRCH-Festschrift, 203-210, 1926. ISIS

Important paper partly inspired by CHAUNCEY D. LEAKE's study (*Isis*, 7, 14-24, 1925), the conclusions of which are disputed. « Für heute kam es mir nur darauf an, die Sachlage kurz zu fixieren und nachzuweisen, dass für die Annahme, an HOHENHEIM sei irgendwie durch CORDUS oder seinen Onkel RALLA die Kenntnis vom Äther und seiner Gewinnung vermittelt worden, bestimmt auch nicht der allermindeste Anhalt vorhanden ist. Ob umgekehrt CORDUS oder RALLA von HOHENHEIMS Kenntnis Vorteil gezogen haben, muss den Gegenstand neuer Untersuchung bilden. Ist deren Ergebnis negativ, so sind andere Quellen für die Vitriolkenntnis des Leipziger Apothekers und seines Neffen historisch aufzudecken. G. S.

C. — *Natural Sciences.*

Almagià, Roberto. La carta della Palestina di GERARDO MERCATORE (1537). Riprodotta per la prima volta dall' unico esemplare esistente nella Biblioteca Communale di Perugia, 8 p., 1 carta. (*Fondo Italiano per lo Studio della Palestina*, Pubblicazione No. 1) Florence, Istituto Geografico Militare, 1927. ISIS

Photographic facsimile of one of a group of maps recently found by ALMAGIÀ in Perugia (see below). J. K. W.

Almagià, Roberto. Intorno ad una raccolta di carte cinquecentesche di proprietà del Lloyd Triestino. *L'Universo*, 8, 263-293, 1927. ISIS

The collection here listed and discussed includes 137 maps, all of which (except one) date from before 1569. Most of the maps were printed in Venice. J. K. W.

Almagià, Roberto. Una serie di preziose carte di MERCATOR conservate a Perugia. *L'Universo*, 7, 801-811, 1926. ISIS

The group of maps here described, which is preserved in the Biblioteca Civica at Perugia, consists of (1) a map of Europe, in 15 sheets (1572); (2) a map of Palestine the only known copy (1537); (3) a series of maps of the

Netherlands (c. 1577 or 1578); (4) a map of the British Isles, in 4 sheets (1564). J. K. W.

Bacchiani, Alessandro. I fratelli da VERRAZZANO e l'eccidio di una spedizione italo-francese in America (1528). *Bollettino della Reale Società Geografica Italiana*, Serie VI, 2, 373-400, 1925. ISIS

New light on GIOVANNI and GEROLAMO DA VERRAZZANO from manuscript sources. J. K. W.

Bertolini, L. D. (*editor*). Relazione sul restauro delle carte geografiche del Palazzo Ducale di Venezia (1762) di GIROLAMO ZANETTI. *Bollettino della Reale Società Geografica Italiana*, serie VII, 2, 309-340, 1925. ISIS

The walls of the Sala dello Scudo in the Ducal Palace at Venice were decorated with maps probably during the reign of FRANCESCO DANDOLO (1545-1553). These maps were restored in 1762 by FRANCESCO GRISELLINI. The present article consists of the text of a contemporary manuscript by GIROLAMO ZANETTI describing the work of restoration, together with a scholarly introduction by Professor BERTOLINI. The maps show the travels of MARCO POLO; also south eastern Asia, North Africa, and the Mediterranean coasts. It is possible that one of the maps may have been made by or under the direction of GIAMBATTISTA RAMUSIO (1495-1557), compiler of the famous collection of travels. J. K. W.

Contarini, Matteo. A map of the world. Engraved by FRANCESCO ROSELLI. 1506. (second edition, revised.) 17 p., and map. British Museum, 1927. ISIS

See review of first edition, 1924, *Isis*, 7, 205, 206, 544.

Eude, Emile. Sur quelques pièces des archives Portugaises concernant les cartographes REINEL. *Comité des travaux historiques et scientifiques, Bulletin de la section de géographie*, 40, p. 1-24, 1925. ISIS

PEDRO REINEL (c. 1470 — c. 1540) and his son JORGE REINEL (c. 1497 — c. 1572) were skilled pilots and, what was synonymous with being a pilot in the Portugal of the early sixteenth century, experts in cartography and geography. PEDRO REINEL appears to have been one of a group of Portuguese malcontents who sold to Spain their expert knowledge at about the time of MAGELLAN's voyage. In the archives at Lisbon Monsieur EUDE has unearthed a report from a confidential agent of the King of Portugal. This agent, writing from Seville in 1519, sketches the program for MAGELLAN's voyage, stating that he had seen the Moluccas on the globe and chart which REINEL's son (JORGE) had made. It is possible that REINEL claimed to have definite knowledge of the position of the Moluccas and that he was called to Spain on the demand of MAGELLAN in order that he might impart this knowledge to CHARLES V. J. K. W.

Feyfer, F. M. G. de. Een onbekend portret van ANDREAS VESALIUS.

Mededeelingen van het Nederlandsch Historisch Institut te Rome, 6, 123-132, 4 pl., 1926. ISIS

The author proves that the Ritratto d'ignoto of the Uffizi (L. Levi, no. 177), ascribed to TINTORETTO, is in reality a portrait of VESALIUS which was probably painted by JAN STEVENSZ. VAN CALCAR c. 1537-42. His demonstration is in my opinion convincing, at any rate as far as VESALIUS is concerned. SPIELMANN's iconography is thus already out-of-date. G. S.

Figueredo, Fidelino de. The geographical discoveries and conquests of the Portuguese. *The Hispanic American Historical Review*, 6, 47-70, 1926. ISIS

This interesting paper aims to give a broad survey of the historical background of Portuguese overseas enterprise in the 16th century. Among other topics, the results of recent researches that have thrown new light on the Portuguese contributions to the arts of shipbuilding, cartography, and nautical astronomy are summarized. J. K. W.

Hassinger, H. Alte Karten aus der Bibliothek VADIANS. *Mitt. der Geographischen Gesellschaft in Wien*, 69, 224-234, 1926. ISIS

VADIANUS was the Latin name adopted by JOACHIM VON WATT (1484-1551), a Swiss humanist, and incidentally something of a geographer. VADIANUS' collection of maps, now preserved in the library of St. Gall, includes an unpublished portolan chart of the Mediterranean dating from about 1522, together with a German woodcut map of the world of the fifteenth century which bears many resemblances to the world map of HANS RÜST, for which the claim has been made that it may be the oldest printed map. See *Isis*, 9, 507. J. K. W.

Heberstein, Sigmund Freiherr zu (1486-1566) Moscovia. In Anlehnung an die älteste deutsche Ausgabe aus dem Lateinischen übertragen von WOLFR. VON DEN STEINEN, eingel. und hrsg. von H. KAUDERS. (Der Weltkreis, Bücher von Entdeckungsfahrten und Reisen, hrsg. von H. KAUDERS. Bd. I.) 238 S., mit zum Teil handkolorierten Wiedergab. zeitgenöss. Bilder. Erlangen, Verlag der Philos. Akademie, 1926. ISIS

Reviewed by EUGEN OBERHUMMER, *Deutsche Literaturzeitung*, 77-80, 1927.

Martinotti, Giovanni. FRANCESCO DAL POZZO e la sua critica di VESALIO. *Mem. d. R. Accad. d. Scienze dell' Istituto di Bologna.* Cl. d. Sc. fis., Sez. di Med. e Chirurgia. Ser. 7, 9, 31-43, 1921-22 (not seen) ISIS

Marzell, Heinrich. Alte Heilkräuter. (*Deutsche Volkheit*, 23). 78 S. Jena, DIEDERICHS, 1926. ISIS

Oberhummer, Eugen. Die Brixener Globen von 1522 der Sammlung

Hauslab-Liechtenstein. In Verbindung mit ARNOLD FEURSTEIN herausgegeben. *Akademie der Wissenschaften in Wien, Phil. hist. Klasse, Denkschriften*, 67. Bd., 3. Abh., reprint, 15 p., 4 plates, 1926. ISIS

A terrestrial globe that belonged in the collection of FRANZ RITTER VON HAUSLAB (1798-1883) and is now in the possession of PRINCE JOHANN VON LIECHTENSTEIN in Vienna, has long been known to students of the history of geography. Professor OBERHUMMER, in the course of a visit to the Liechtenstein collection, recently found a celestial globe of the same size and obviously constructed to accompany the terrestrial globe (or vice versa). On this celestial globe is an inscription showing that it was made at Brixen in 1522. The geographical features on the terrestrial globe together with many legends were evidently copied from the famous MARTIN WALDSEEMÜLLER map of 1507. Later additions, however, indicate that the globe may have been made after the return of MAGELLAN in 1522. J. K. W.

Ortroy, F. van. Les sources scientifiques de la cartographie mercatorienne. Mélanges HENRI PIRENNE, vol. II, p. 635-652, Bruxelles, 1926. ISIS

« C'est en pleine période de rénovation scientifique et économique qu'apparaissent GEMMA FRISIUS (1508-1555), et son élève GÉRARD MERCATOR. Imprégnés de l'esprit de recherches, inhérent à leur époque, ils furent, le premier un précurseur, le second, un rénovateur. A GEMMA revient l'honneur de deux grosses découvertes, dont le principe est resté immuable dans ses applications: a) Méthode de levé du terrain, décrite dans le *Libellus de locorum describendorum ratione...* 1533. C'est le premier jalon d'une triangulation ; b) la manière de déterminer les longitudes au moyen des horloges. Nous devons à G. MERCATOR non seulement la projection à latitudes croissantes (1569), qui fut son triomphe, et continue d'être employée dans les cartes marines, mais un remaniement profond dans la construction des cartes terrestres. »

Pavanello, Giuseppe. SEBASTIANO CABOTO alla scoperta del Paranà e del Paraguay (3 aprile 1526-22 luglio 1530). *Le vie d'Italia e dell' America latina*, 32, N. 3, p. 303-311., 1 illus., 5 sketch maps, 1926.

Piri Re'is. Bahrije. Das türkische Segelhandbuch für das Mittelländische Meer vom Jahre 1521. Herausgegeben, übersetzt und erklärt von PAUL KAHLE. Berlin, WALTER DE GRUYTER, 1927 sq. ISIS

To appear in fifteen parts forming three volumes. « Die vorliegende Ausgabe der Bahrije des PIRI RE'IS ist eine Reproduktion im Lichtdruckverfahren der 1570 beendeten Handschrift der Bibliothek der Königlichen Universität zu Bologna, die an den Stellen, wo sie Lücken aufweist, aus der 1533 beendeten Handschrift der Sachsischen Staatsbibliothek zu Dresden ergänzt ist. Die Übersetzung des Werkes, die als zweiter Band erscheint, enthält das textkritische Material, während der dritte einen Kommentar zu den einzelnen Kapiteln sowie weitere das Werk betreffende Untersuchungen und Nachwiese enthalten wird. »

D. — *Medical Sciences.*

Achelis, J. D. Bemerkungen zu ASCHNERS Parazelsusübersetzung. *Archiv für Geschichte der Medizin*, 19, 187-196, 1927. ISIS

Battistini, Mario. Il medico ANDREA PASQUALI. *Riv. di sc. med. e nat.*, 17, 230-232, 1926. ISIS

ANDREA PASQUALI (1496-1572) est figuré dans un tableau qui orne, à Florence, une chapelle dédiée à la résurrection du Christ, en l'église S. Maria Novella. L. G.

Fuchs, Leonhard. Tabelle der Augenkrankheiten im lateinischen Originalwortlaut von 1538, bekanntgegeben von KARL SUDHOFF. *Archiv für Augenheilkunde*, 97, 493-501, 1926 (*see under* SUDHOFF, KARL). ISIS

Koch, Richard. Ärztliche Studie über zwölf theologische Schriften HOHENHEIMS aus der Philosophia magna. *Archiv für Geschichte der Medizin*, 19, 169-186, 1927. ISIS

Luttinger, Paul. BENVENUTO CELLINI's ultra-modern cure for syphilis. *Medical Life*, 34, 37-38, 1927. ISIS

Suggesting that CELLINI was cured by plasmodium malariae while hunting in the Roman campana ! G. S.

(Paracelsus). BERNARD ASCHNER : PARACELSUS' sämtliche Werke. Nach der zehnbändigen Huserschen Gesamtausgabe (1589-1591) zum ersten Mal in neuzeitliches Deutsch übersetzt, mit Einleitung, Biographie, Literaturangaben und erklärenden Anmerkungen versehen. Erster Band mit einem Bildnis. LXIV + 1012 S. Jena, FISCHER, 1926. ISIS

Reviewed by K. SUDHOFF, in *Münchener mediz. Wochenschrift*, 1715-1717, 1926.

Sudhoff, Karl. HOHENHEIMS medizinisches und naturwissenschaftliches Denken. Ein Vortrag. (19 S.) *Schweizerische medizinische Wochenschrift*, 56. Jahrg., Nr. 37, Basel, 1926. ISIS

Sudhoff, Karl. Des LEONHART FUCHS, Professors in Tübingen, Tabelle der Augenkrankheiten, im lateinischen Originalwortlaut von 1538 bekanntgegeben. *Archiv für Augenheilkunde*, 97, 493-501, 1926. ISIS

A German text « Alle Krankheyt der Augen » was published in Strassburg 1539 under LEONHART FUCHS's name. It was edited by ED. PERGENS in 1899. SUDHOFF has found the original Latin text, far superior, published at Tübingen

in 1538 in the form of a broadsheet, printed on one side only. The text is here reproduced in extenso. G. S.

Thompson, C. J. S. The Scamnum, as described by GUIDO GUIDI, illustrated by an actual specimen of the sixteenth century. *Proc. Roy. Soc. Med.*, 18, Sec. Hist. Med., 13-15, 1925. ISIS

THOMPSON describes a luxation table found in the ancient monastery of Pennabilli, about sixteen miles from Urbino. The table is similar to that described by ORIBASIUS, and first depicted in a manuscript by NICETAS, a Byzantine doctor of the tenth century, which is now in the Laurentian Library at Florence. The manuscript was translated by GUIDO GUIDI (VIDUS VIDIUS), about 1540. The table, therefore, may be said to be a direct descendant of the Scamnum of HIPPOCRATES, reproduced in a wood-cut in the first edition of GUIDO GUIDI's « Chirurgia », Paris, 1544. In THOMPSON's opinion, it was probably made in Florence in the time of GUIDO GUIDI and may have been one of the models constructed under his direction. H. R. V.

E. — *Alia*.

Dodgson, Campbell. The various editions of DÜRER's book on fortification. Letter to the editor, *Times Literary Supplement*, October 21, 1926. ISIS

Dyke, Paul van. IGNATIUS LOYOLA, the founder of the Jesuits. VI + 381 p. New York, CHARLES SCRIBNER, 1926. ISIS

Reviewed by PRESERVED SMITH, *American Historical Review*, 32, 587-589, 1927.

Lawton, Harold Walter. Contributions à l'histoire de l'humanisme en France; TÉRENCE en France au XVI^e^ siècle. Paris, JOUVE, 1926. ISIS

Lefranc, Abel. Les commencements du collège de France (1529-1544). Mélanges HENRI PIRENNE, vol. I, p. 291-306, Bruxelles, 1926. ISIS

Olschki, Leonardo. L'accademia fiorentina del disegno nella storia delle arti e delle scienze. *Nuova Antologia*, Dic. 1926, 12 p. ISIS

Renaudet, Augustin. ERASME. Sa pensée religieuse et son action d'après sa correspondance (1518-1521). VIII + 138 p. Paris, (*Bibliothèque de la Revue historique*), F. ALCAN, 1926. ISIS

Cette étude, appuyée sur la correspondance d'ERASME publiée par P. S. et H. M. ALLEN (*Isis*, 5, 508; 7, 210), éclaire cette période de la vie d'ERASME à Louvain (1517-1521), pendant laquelle il eut tant de mal à prendre position nette pour ou contre LUTHER, où il fut en butte aux attaques furieuses des moines qui lui attribuaient les pires ouvrages du parti lutbérien, au point qu'il dut quitter Louvain le 18 octobre 1521.Il pouvait du moins en se retirant,

mesurer les beaux progrès accomplis par l'humanisme à Louvain pendant les courtes années de son séjour. L. G.

Roersch, Alphonse. Le vrai nom de NICOLAS CLÉNARD. Mélanges HENRI PIRENNE, vol. II, p. 411-418, Bruxelles, 1926. ISIS

« NICOLAS DE BEKE et NICOLAS CLÉNARD sont une seule et même personne. CLÉNARD est bien le fils de PETRUS DE BEKE, honorable bourgeois de Diest, et son vrai nom est NICOLAS DE BEKE ou A BECA. » NICOLAS CLÉNARD mourut à Grenade en 1542.

Vaux de Foletier, François de. GALIOT DE GENOUILLAC, Maître de l'Artillerie de France (1465-1546). Plates and portraits. Paris, PICARD, 1925. ISIS

XVIth Century (second half)

A. — *Mathematics.*

Bortolotti, Ettore. Primordi della geometria analitica. L'algebra geometria di PAOLO BONASONI nel MSS. 314 della Biblioteca Universitaria di Bologna. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell' Istituto di Bologna*, 18 p. Anno Accademico 1924-25. ISIS

PAOLO BONASONI taught at the University of Bologna from 1587-88 to 1592-93. His Algebra geometrica was probably composed before 1587. The author describes the MS. and analyzes its contents. « L'operetta del BONASONI non contiene risultati nuovi di qualche rilievo; ma è tuttavia interessante storicamente per le notizie che da essa si ricavano sulle cognizioni, le idee, i metodi che si avevano a' suoi tempi nella nostra scuola matematica, e perchè dà qualche lume sui passi fatti dall' algoritmo analitico lungo la strada che, dalla primitiva algebra geometrica dei greci, condusse all' algebra letterale, ed alla moderna geometria analitica. Il BONASONI dà un metodo generale per ricavare dalla formula risolutiva trovata con regola d'algebra, la costruzione atta a risolvere il problema posto nella sua più generale veste geometrica, e dimostra cosi che *si possono costruire con la riga e col compasso tutti i problemi algebricamente riducibili al secondo grado*; anche in casi singolarmente complicati, la cui risoluzione geometrica era fino allora sfuggita ai più sagaci ricercatori. Ma la sua trattazione è notevole sopratutto per le notazioni simboliche da lui adoperate. Egli precede il VIETA nella rappresentazione letterale delle quantità incognite e delle date; ma, per distinguere queste da quelle, usa il simbolo bombelliano $\overset{1}{\smile}$ che accoppia alle lettere rappresentanti segmenti incogniti. Non sa, o non vuole trar profitto dalla notazione esponenziale che il BOMBELLI aveva introdotto per le potenze della incognita, e si attiene strettamente al significato geometrico, indicando i prodotti e le potenze coi nomi di rettangolo, quadrato, cubo... Il suo algoritmo (al pari di quello del VIETA) è dunque su questo punto meno vantaggiosi di quello bombelliano, mentre sopra di questo ha il vantaggio della distinzione, con simboli diversi, delle singole incognite che intervengono in uno stesso problema. » G. S.

Bortolotti, Ettore. Il primo fra i quesiti proposti dal FERRARI al TARtaglia nel suo 3° Cartello di matematica disfida, e la inscrizione nel cerchio dei poligoni regolari di 7 e di 9 lati. *Rend. R. Acc. Scienze Istituto di Bologna*, 10 p. Bologna, 1925/26. ISIS

Wieleitner, Heinrich. Zu BOMBELLIS Bezeichnung der Unbekannten und ihrer Potenzen. *Arch. di storia d. scienza*, 7, 29-33, 1926. ISIS

Discussion et réfutation de l'opinion émise par BORTOLOTTI (*Isis*, 8, 545) que la découverte d'un symbole pour représenter l'inconnue est due à BOMBELLI. L. G.

Wieleitner, Heinrich. Uber die Fortschritte, die SIMON STEVIN in der Lösung der quadratischen Gleichung erzeilte. *Sitzungsberichten der Physikalisch-medizinischen Sozietät zu Erlangen*, Bd. 58/59, S. 177-180, 1926-27. ISIS

B. — *Physical Sciences and Technology.*

Digges, Leonard. The theodolitus and topographical instrument of LEONARD DIGGES of University College, Oxford. Described by his son THOMAS DIGGES in 1571. Reprinted from Longimetra, the Fyrst Booke of Pantometria. (Old Ashmolean Reprints, 4). xx + 59 p. Oxford, R. T. GUNTHER, Magdalen College, 1927. ISIS

Digges, Leonard. A prognostication of right good effect, fructfully augmented contayninge playne, briefe, pleassant, chosen rules, to iudge the wether for euer, by the Sunne, Moone, Sterres, Cometes, Raynbowe, Thunder, Cloudes, with other Extraordinarie tokens, not omitting the Aspectes of Planetes, with a brefe Iudgemente for euer, of Plentie, Lacke, Sickeness, Death, VVarres, &c. Openinge also many naturall causes, woorthy to be knowen, to these and others, now at the last adioyned, diuers generall pleasaunte Tables : for euer manyfolde wayes profitable, to al maner of men of any vnderstanding : therfore agayne publisshed by LEONARD DYGGES Gentylman, in the yeare of oure Lorde 1555. (Old Ashmolean Reprints, 3.) xvi + 76 p. Oxford, R. T. GUNTHER, Magdalen College, 1927. ISIS

Mordtmann, J. H. Das Observatorium des TAQÎ ED-DÎN zu Pera. *Der Islam*, 13, 82-96, 1923. ISIS

Paoli, Giulio Umberto. L'età aurea della metallurgia ispano-coloniale. *Arch. di storia d. scienza*, 7, 95-115, 226-234, 1926; 8, 83-94, 200-213, 364-376, 1927. ISIS

Notes bio-bibliographiques sur quelques explorateurs, prospecteurs, des XVI^e^ et XVII^e^ siècle. L. G.

Pereira da Silva, Luciano. A « Regra geral das festas mudaveis », de GONÇALO TRANCOSO, autor dos « Contos de proveito e exemplo ». XXXII + 48 p., illustr. Coimbra, impresa da universidade, 1925. ISIS

Commentaire et réimpression d'une « Regra geral pera aprender a tirar pola mao as festas mudaueis do ano », composée par GONÇALO FERNANDES TRANCOSO en 1565, et imprimée en 1570, dont on ne connait que deux exemplaires; bibliothèque nationale de Lisbonne, et bibliothèque publique de Evora. Intéressant pour l'histoire de l'art de la navigation. L. G.

C. — *Natural Sciences.*

Almagià, Roberto. La pittura della Liguria nella galleria Vaticana (Reprint from) IX Congresso Geografico Italiano. 1 fig., 3 p. Genova, Aprile 1924. ISIS

The map of Liguria painted on the wall in the gallery of maps in the Vatican (1580-1582) is the «oldest large scale geographical map of the Ligurian region which is known at the present time. » It is here reproduced photographically. J. K. W.

Busbeck, Ogier Ghiselin von. Vier Briefe aus der Türkei 1555-1562. Aus dem lateinischen übertragen, eingeleitet und mit Anmerk. versehen von WOLFRAM VON DEN STEINEN. (Der Weltkreis. Bücher von Entdeckerfahrten und Reisen hrsg. von HAND KAUDERS, Bd. 2). 227 S., mit 20 Wiedergaben zeitgenöss. Holzschnitte und Kupfer. Erlangen, Verl. d. Philos. Akademie, 1926. ISIS

Reviewed by FRANZ TAESCHNER, *Deutsche Literaturzeitung*, 2005-2007, 1926.

Caraci, Giuseppe. Di due delle più antiche rappresentazioni cartografiche a stampa di Firenze. *La Geografia*, 14, 148-158, 1926. ISIS

Dernschwam, Hans. Tagebuch einer Reise nach Konstantinopel und Kleinasien (1553/55) nach der Urschrift im Fugger-Archiv hrgs. und erläutert von FRANZ BABINGER. XXXVI + 314 p. Studien zur Fugger-Geschichte, hrsg. von JACOB STRIEDER, 7). München, 1923. ISIS

Reviewed by TH. NÖLDEKE, *Der Islam*, 14, 156-158, 1925.

Fordham, Sir H. George. CHRISTOPHER SAXTON's general map of England and Wales (1579). *The Geographical Journal*, 62, 63-66, 1926. ISIS

Heawood, Edward. Some early county maps. *The Geographical Journal*, 68, 325-337, 1926. ISIS

Discussion of certain hitherto obscure maps of British counties ; those of JOHN NORDEN (closing years of the 16th century) and a series of a dozen anonymous maps (1602-03) based largely on the work of NORDEN and CHRISTOPHER SAXTON. These, together with the better known county maps of SAXTON (1579) and JOHN SPEED (1611), are of interest as illustrating the beginnings in England of a movement toward « more detailed and accurate (cartographic) representations based on actual field work », which had « set in almost simultaneously (toward the end of the sixteenth century) in the principal European countries... » J. K. W.

(Houtman, Cornelis de). De eerste schipvaart der Nederlanders naar Oost-Indië onder CORNELIS DE HOUTMAN, 1595-1597. Journalen, documenten en andere bescheiden uitgegeven en toegelicht door G. P. ROUFFAER en J. W. IJZERMAN. Vol. I. D'eerste boeck van WILLEM LODEWYCKSZ, XXVIII + 248 p., frontispiece, 2 portraits, 8 maps, 47 plates. 1915. Vol. II, De oudste journalen der reis : Verhael (1597), Journael (1598), (FRANK) VAN DER DOES (HS.) (short journal), XXXVIII + 426 p., 15 maps, 18 plates, 6 facsimiles, 1925. The Hague, NIJHOFF, 1926. ISIS

Hunger, F. W. T. CHARLES DE L'ESCLUSE (CAROLUS CLUSIUS) 1526-1609. *Bijdragen tot de geschiedenis der geneeskunde*, 6, 281-288, 1926. ISIS

Hunger, F. W. T. CLUSIUS-tentoonstelling in het stedelijk museum « de lakenhal » te Leiden, 19 october - 30 october 1926, Catalogus. 70 p. Leiden, A. W. SIJTHOFF, 1926. ISIS

This catalogue of the exhibition arranged to commemorate the fourth centenary of the birth year of CAROLUS CLUSIUS (CHARLES DE L'ESCLUSE, 1526-1609) has been prepared with so much care, that it is a publication of lasting value. Contents : 1. Chronologische CLUSIUS-tentoonstelling; 2. Werken na CLUSIUS' dood verschenen; 3. Gedrukte brieven van en aan CLUSIUS; 4. Portretten; 5. Geteekende herbaria, autographen en varia; 6. Verzameling van paddestoelen. G. S.

Irving, Laurence (*editor*). A selection of the principal voyages, traffiques and discoveries of the English nation by RICHARD HAKLUYT, 1552-1616. Set out with many embellishments and a preface. XXIV + 294 p. New York, KNOPF, 1926. ISIS

An abridgement of HAKLUYT for the general reader, illustrated with fascinating wood cuts. J. K. W.

Mecham, J. Lloyd. The second Spanish expedition to New Mexico : An account of the CHAMUSCADO-RODRIGUEZ entrada of 1581-1582. *The New Mexico Historical Review*, p. 265-291, 1926. ISIS

Account, based partly on published sources and partly on unpublished documents in the Archivio General de Indias, of the first Spanish exploration

in New Mexico after Coronado (1540). The expedition, organized by the Franciscan father AUGUSTÍN RODRÍGUEZ, who was killed by the Indians, and led by Captain FRANCISCO SANCHEZ « EL CHAMUSCADO », penetrated as far north as the present Taos and west to the Zuñi country. J. K. W.

Noort, Olivier van. De Reis om de Wereld door OLIVIER VAN NOORT, 1598-1601, met inleiding en aanteekeningen, edited by J. W. IJZERMAN. 2 vols., Vol. I, VIII + 265 p., 40 maps and plates; Vol. II, XII + 300 p., 11 maps and plates. The Hague, NIJHOFF, 1926. ISIS

Oberhummer, Eugen. Die Weltkarte des PIERRE DESCELIERS von 1553. Sonder-Abdruck der *Mitteilungen der Geographischen Gesellschaft in Wien*, 68. Bd., 11 p., 1925. ISIS

Comparative study of the map of DESCELIERS of 1553 (published in 1924 by the Vienna Geographical Society, see *Isis*, 9, 158) in relation to other maps of the same author. J. K. W.

Penzer, N. M. (*editor*). The « World Encompassed » and analagous contemporary documents concerning Sir FRANCIS DRAKE's circum navigation of the world with an appreciation of the achievement by Sir RICHARD CARNAC TEMPLE, Bt. LXV + 235 p., 4 maps, 2 facs., 3 illust. London, The Argonaut Press, 1926. ISIS

DRAKE's own account of his circumnavigation is lost. The *World Encompassed*, published by his nephew, Sir FRANCIS DRAKE, in 1628, is based largely upon « the tales told by (the navigator's) Chaplain FRANCIS FLETCHER and other contemporaries. » Both the younger DRAKE's narrative and FLETCHER's Notes are here published in full, the latter taken directly from the original manuscript of the British museum, W. S. W. VAUX's version in the Hakluyt Society series (1854) having proved very unsatisfactory. Other important documents relating to the circumnavigation are also reprinted, including some of the important reports from Spanish sources first published by Mrs. ZELIA NUTTALL in her *New Light on Drake* (Hakluyt Society, 1914; *Isis*, 4, 145). Sir RICHARD TEMPLE's admirable « Appreciation » (52 p.) is devoted primarily to the great voyage, although DRAKE's career before and after the circumnavigation is briefly outlined. Sketch maps showing TEMPLE's reconstruction of DRAKE's probable routes along the African and South American coasts and through the Malay Archipelago (the latter being the first map of its sort ever produced) are included. The volume is excellently edited and attractively printed. J. K. W.

Ribaut, Jean. The whole and true discouerye of Terra Florida; a facsimile reprint of the London edition of 1563 together with a transcript of an English version in the British Museum with notes by H. M. BIGGARAUD and a biography by J. TH. CONNOR. Edited by JEANETTE THURBER CONNOR. (*Publications of the Florida State Historical Society*, 7). XVI + 139 p., plates, plan and map. Deland, Fla., the Society, 1927. ISIS

Reviewed in *American Historical Review*, 32, 657, 1927.

Richter, Herman. WILLEM JANSZ. BLAEU — en TYCHO BRAHES Lärjunge. Ett Blad ur Kartografiens Historia Omkring ar 1600. *Sydsvenska geografiska sällskapet*, Arsbok, p. 49-66, 2 maps, 1 fig., 1925. ISIS

(Staden, Hans). Warhafftig Historia unnd beschreibung eyner Landtschafft der wilden nacketen grimmigen Menschfresser Leuthen in der Newenwelt America gelegen. Faksimile-Wiedergabe nach der Erstausgabe « Marpurg uff Fastnacht 1557 » mit einer Begleitschrift von RICHARD N. WEGNER. 90 + 278. Frankfurt a. M., WÜSTEN & Co., 1925. ISIS

Vetter, Quido. TADEÁS HÁJEK z Hájku. (Ke čtyřsetletému výroči jeho narození). 16 p. Zvláštní otisk z časopi su Říše hvězd, ročník VI., číslo 6 (no date, received in 1927). ISIS

Biography of the Czechic astronomer, geographer and physician THADDAEUS HAGECIUS ab Hagek (1525-1600), with portrait and other illustrations. G. S.

Vetter, Quido. O TADEÁŠI HÁJKOVI z Hájku. (Ke čtyřstaletému výročí jeho narozeni). Zeměměřičského Véstniku, č. 2, rok 1926 (4 p.) ISIS

THADDAEUS HAGECIUS ab Hagek (1525-1600) was a famous astronomer, physician to the emperors MAXIMILIAN II. and RUDOLPH II., the most remarkable representative of Czechic science in his time (see Poggendorfs' Handwörterbuch, I, 991). His father SIMON, was a scholar and alchemist ; JOHN DEE wrote a description of his (SIMON's) magnificent study. THADDAEUS had undertaken to compile an accurate map of Bohemia and had begun the necessary geodetic measurements. He appealed to the emperors for financial help in this great undertaking, but this help was denied. VETTER reproduces DEE's description and the report of MATHAEUS COLLINUS de Choterina on THADDAEUS's geographical work. G. S.

D. — *Medical Sciences.*

Cornaro, Luigi. Vom mässigen Leben und der Kunst ein hohes Alter zu erreichen. Nebst Briefen und anderen Urkunden über des Autors Leben und Schaffen. 127 S. Basel, BENNO SCHWABE, 1925. ISIS

Lejeune, Fritz. Das Gesundheitsreglement des PALMIRENO vom Jahre 1569. Ein Beitrag zur Kenntnis der spanischen Volksmedizin im XVI. Jahrhundert. Zum ersten Male ins Deutsche übertragen und mit Anmerkungen versehen. 48 S. Greifswald. L. BAMBERG, 1926. ISIS

Lippmann, Edmund O. von. Eine Kohlenoxyd-Vergiftung aus dem 16. Jahrhundert. TSCHIRCH-Festschrift, 155-157, 1926. ISIS

Apropos of a case of the year 1575 reported by A. PARÉ (Oeuvres, MALGAIGNE, vol. 3, 661). G. S.

E. — *Alia.*

Gentili, Alberico. De legationibus libri tres. Translation by GORDON J. LAING. (*Publications of the Carnegie Endowment for International Peace, Division of International Law*). 38 + 231 p.; 37 + x + 208 p. New York, Oxford University Press, 1924. ISIS

Reviewed by J. S. REEVES, *American Historical Review*, 32, 279-299, 1927.

Harris, D. Fraser. SHAKESPEARE's perceptions of the functional importance of the brain. *Medical Life*, 34, 15-21, 1927. ISIS

Ronzy, Pierre. Un humaniste italianisant : PAPIRE MASSON (1544-1611). XXVII + 690 p. Bibliographie critique (*Thèse complémentaire*) XV + 167 p. 2 vol. Paris, CHAMPION, 1924. ISIS

XVIIth Century (whole and first half)

A. — *Mathematics.*

Bosmans, H. (S.J.) A propos de la correspondance de Descartes avec CONSTANTIN HUYGENS récemment publiée par M. LÉON ROTH, l'auteur principal de l'Onwissen wiskonstenaer, I. I. STAMPIOENIVS ontdeckt door JACOBUS A WAESSENAER (Leyde 1640). *Revue des Questions scientifiques*, 29 p., Louvain, janvier 1927. ISIS

Bosmans, H. (S. J.) Le mathématicien anversois JEAN-CHARLES DELLA FAILLE de la Compagnie de Jésus. *Mathesis*, 41, 5-11, 1927. ISIS

JEAN CHARLES DELLA FAILLE naquit à Anvers le 1er mars 1597; il entra dans la Compagnie de Jésus et devint l'élève de FRANÇOIS D'AGUILLON et surtout de GRÉGOIRE DE SAINT-VINCENT; il enseigna à Dôle, Louvain et enfin à Madrid où il devint le précepteur et le familier de DON JUAN, fils de PHILIPPE IV; il mourut au siège de Barcelone, le 4 novembre 1652. Son principal ouvrage, *Theoremata de centro gravitatis partium circuli et ellipsis*, parut à Anvers en 1632. Ce traité fut longuement analysé par l'auteur en 1914 dans *S. B.*, 38, 255-317 (Louvain, CEUTERICK). Il ajoute ici quelques détails biographiques. « Le point culminant du Traité est la proposition 32, qu'en langage moderne on peut formuler comme suit : Si R est le rayon, et A l'angle d'un secteur circulaire ; le centre de gravité du secteur est situé sur la bissectrice, à une distance du sommet de l'angle du secteur donné par

$$d = \frac{2}{3} R \frac{\text{corde A}}{\text{arc A}}$$

G. S.

Bosmans, H. La trigonométrie d'ALBERT GIRARD, (La Haye, 1626). *Mathesis*, 337- 348, 385-92, 433-439, Bruxelles, 1926. ISIS

« ALBERT GIRARD nous a laissé deux travaux sur la trigonométrie. En 1626, il a joint à sa *Table des sinus* un précis de trigonométrie rectiligne et sphérique, fort court, mais peu banal. En 1629, la dernière partie de son *Invention nouvelle en l'Algèbre* traite « De la nature de la superficie des triangles et polygones sphériques nouvellement inventée par ALBERT GIRARD ». GIRARD ne fait guère d'allusion aux surfaces sphériques dans sa trigonométrie de 1626 et l'importante question de leur mesure demande une étude séparée. Je n'y toucherai pas aujourd'hui, et m'en tiendrai au Précis de trigonométrie. » Suit une analyse détaillée de ce précis. G. S.

Dimier, Louis. La vie raisonnable de DESCARTES. 284 p., PLON, Paris, 1926. ISIS

« L'esprit de parti » que l'auteur reproche en particulier à CH. ADAM, éclate à chaque instant dans ce livre où n'est pas perdue une occasion de partir en guerre contre MONTAIGNE, VOLTAIRE, J. J. ROUSSEAU, les Encyclopédistes : « l'Encyclopédie fut une cohue d'ignorants » (p. 184), contre le droit international (p. 247) ; l'auteur affirme que FERMAT était un homme d'une « routine aux pieds de plomb » (p. 105); en revanche, en 1660 « il y avait vingt ans que le flot de l'athéisme était coupé. Comment et par qui ? Par DESCARTES », et en quelques lignes qui n'ont rien à voir en l'affaire, on établit « le caractère d'apologiste » de DESCARTES (p. 181). — Par ailleurs, l'auteur est assez mal renseigné en physique : l'indice de réfraction est le sinus de deux angles ! (p. 97); touchant l'arc en ciel, DESCARTES a donné « des explications et des calculs auxquels la science n'a rien ajouté depuis lors » (p. 65), « l'histoire de la science n'offre rien de plus achevé » (p. 101). L. G.

Maire, Albert. Bibliographie générale des œuvres de BLAISE PASCAL. t. IV. PASCAL philosophe. 420 p. Paris, GIRAUD-BADIN, 1926. ISIS

Pour les vol. antérieurs de cette bibliographie, voir *Isis*, 9, 370-372. L'auteur a groupé ici l'ensemble des documents qui intéressent les Pensées : MS., éditions, traductions, pp. 93-213; compte-rendus des édit. des Pensées (217-232); critiques et travaux sur les Pensées (235-397). Dans sa longue introduction, MAIRE examine la philosophie de PASCAL au regard du jansénisme, et conclut, rejoignant ainsi MAURICE BLONDEL (*Isis* 6, 168) que « par leurs origines, leurs éditions, par les commentaires qu'elles suscitèrent, les Pensées, envisagées dans leur forme bibliographique, marquent décidément la rupture de PASCAL et du jansénisme. » L. G.

Maire, Albert. Bibliographie générale des œuvres de BLAISE PASCAL. T. V. Opuscules, lettres, biographie et iconographie. Éditions originales, réimpressions successives, avec notes critiques et analyses des travaux qui les citent et de ceux qui en dérivent, avec la collaboration de LOUIS WEBER-SILVAIN. 380 p., 3 pl. L. GIRAUD-BADIN, Paris, 1927. ISIS

Avec ce volume se termine l'œuvre considérable entreprise et menée à bien par ALBERT MAIRE (*vide supra*). Introduction d'une centaine de pages : Opuscules de BLAISE et JACQUELINE PASCAL, lettres de B. PASCAL, des membres de sa famille et de ses correspondants, la vie et la mort de PASCAL (pp. 21-83),

les portraits de PASCAL. Dans le corps du livre proprement dit, la bibliographie des Opuscules de BLAISE et JACQUELINE occupe 55 pp., celle des lettres de PASCAL ou se rapportant à lui en tient 30; 130 pp. sont prises par les documents biographiques, une vingtaine par les documents iconographiques; le portrait de PASCAL adolescent que je me suis plaint de ne pas retrouver en frontispice de l'œuvre entière figure dans ce volume, ainsi qu'un portrait de PASCAL à 39 ans, gravé par EDELINCK d'après le portrait fait par L. N. QUESNEL après la mort de PASCAL en fonction du moulage de la face, et qui est peut-être le seul authentique; sont reproduites aussi quatre médailles commémoratives.

On peut mesurer maintenant toute l'ampleur du travail d'ALBERT MAIRE; une œuvre aussi énorme ne saurait être exempte de défauts; telle qu'elle est, elle constitue un outil d'un prix inestimable, et la pensée des services qu'elle rendra chaque jour peut faire la joie de son auteur. L. G.

B. — *Physical Sciences and Technology.*

(Kepler, Johannes). Die Astrologie des JOHANNES KEPLER. Eine Auswahl aus seinen Schriften. Eingeleitet und herausgegeben von HEINR. ARTUR STRAUSS und SIGFRID STRAUSS-KLOEBE. 232 S., Porträt. München, OLDENBOURG, 1926. ISIS

Ronchi, Vasco. Sopra le caratteristiche dei cannocchiali « di GALILEO » e sulla loro autenticità. *Atti d. R. Accad. Naz. dei Lincei, Serie Quinta, Rendiconti, Cl. di sc. fis.*, 32, 339-343, 1923. ISIS

« Se a GALILEO si è voluto contrastare l'invenzione del cannocchiale, non gli si può negare il merito di aver costruito il primo cannocchiale astronomico, cioè capace di vedere e studiare il mondo celeste ».

C. — *Natural Sciences.*

Ashley, W. The English improvers. Mélanges HENRI PIRENNE, p. 1-6, Bruxelles, 1926. ISIS

Apropos of GERVASE MARKHAM. Farewell to husbandry, or the enrichment of all sorts of barren ground, 1620 and of WALTER BLITH. The English improver, 1649.

Foster, Sir William. PURCHAS and his ' Pilgrimes'. *The Geographical Journal*, 68, 193-200, 1926. ISIS

Estimate of the work of the Rev. SAMUEL PURCHAS (1577-1626) on the occasion of the tercentenary of his death. Unlike his predecessor HAKLUYT, PURCHAS lacked critical acumen and editorial skill. He was, however, extraordinarily diligent in his search for accounts of voyages, according to his own assertions, drawing on more than 1300 authors. His great compilation, HAKLUYTUS Posthumus, or PURCHAS his Pilgrimes (1626) contains at least 4,250,000 words. J. K. W.

Juan of Persia, Don (afterwards ULUGH BEG). A Shi'ah catholic.

(1560-1604). Translated and edited with an introduction by G. LE STRANGE. (The Broadway Travellers). Maps. London, HARPER, 1926. ISIS

Spanish edition, Valladolid, 1604.

Juel, H. O. Studien in BURSER's Hortus siccus. *Nova Acta, Reg. Soc. Scient. Upsaliensis*, Ser. 4, vol. 5, No 7. XVI + 144 S. Uppsala, EDV. BERLING, 1923. ISIS

JOACHIM BURSER (1583-1639) of Kamenz, Saxony, professor of medicine in Sorö, Seeland, Denmark.

Relation d'un voyage en Espagne (1612). *Revue Hispanique*, 59, 359-555, 1923. ISIS

The author of this account is unknown, the text being published from a manuscript in the library at Rouen. The traveler was particularly interested in the works of man and their historical significance; he indulges in long historical digressions but says little about nature. His route took him through Barcelona, Saragossa, Huesca, Calatayud, Siguenza, Guadalajara, Madrid, Toledo, the Escurial, Segovia, Valladolid, Burgos, Tolosa, Fontarabia, Irun, and from there to Paris. In mentioning Toledo he speaks of the astronomical tables compiled under ALPHONSO X, pointing out that the prime meridian for these was taken as passing through Toledo and not through the Fortunate Isles, 10° farther west « de sorte qu'il fault tousiours adiouster 10. degrez à la suputation de ces astronomes espagnols pour la faire conuenir à l'ordinaire. » J. K. W.

D. — *Medical Sciences.*

Andel, M. A. van. ARNOLDUS BOOT (1606-1653) en de eerste beschrijving der Rachitis. *Bijdragen tot de geschiedenis der geneesk.*, 6, 309-319, 1926. ISIS

Apropos of the *Observationes medicae de affectibus omissis* (London 1649), which contains, in chapter 12, the earliest description of rickets, under the name « *tabes pectorea.* » FRANCIS GLISSON's description introducing the name rachitis appeared a year later, *De rachitide sive morbo puerili qui vulgo the rickets dicitur tractatus* (London 1650). BOOT's treatise is republished in the *Opuscula selecta Neerlandicorum de arte medica*, vol. 5 (*see below*). G. S.

(Back, Jacob van de). JACOBI DE BACK apud Roterodamenses medici ordinarii Dissertatio de corde, in qua agitur de nullitate spirituum, de haematosi, de viventium calore, etc. praemissum ad lectores alloquium. Annexa appendix pro circulatione Harveiana. Roterodami, ex officinâ ARNOLDI LEERS, 1648. *Opuscula selecta Neerlandicorum de arte medica*, fasciculus quintus, p. 1-259, Amsterdam, 1926. ISIS

It is much to the credit of Dutch medicine that their physicians were among the first to accept the Harveyan theory. One of the ablest exponents of it was JACOB DE BACK, a Rotterdam physician, of whom we know practically

nothing, save that he was educated in Leiden and Franeker. The text of his Latin treatise is here reproduced from the first edition, Rotterdam, 1648, together with the Dutch translation of Amsterdam, 1651. The editors have added the notes and elaborate index which appeared in the second Latin and Dutch editions, Rotterdam, 1654. An English version of DE BACK's treatise was appended to the English editions of HARVEY's Anatomical exercises, London 1653, and 1673. It is very strange that so little should be known of a man, who was apparently very able and who enjoyed the esteem of his contemporaries. G. S.

Boot, Arnoldus (1606-c. 1653). De tabe pectorea (1649). *Opuscula selecta Neerlandicorum de arte medica*, fasciculus quintus, 260-273, Amsterdam, 1926. ISIS

BOOT was born in Gorcum in 1606, and died about 1653; he was not only an able physician, but an Orientalist who had a good knowledge of Hebrew and Syriac. He lived for a time in Paris then in London and Dublin, then again in Paris. His brother GERARD (1604-1650) who called himself BOATE (the English phonetic equivalent of his original Dutch name), was physician to CHARLES I and the author of *Ireland's Naturall History* (1652). To return to ARNOLD, he published in London in 1649 his *Observationes medicae de affectibus omissis*, which is important because it contains the earliest description of rickets (FRANCIS GLISSON's treatise, *De rachitide sive morbo puerili qui vulgo the rickets dicitur*, appeared only in the following year). BOOT was not the only writer to anticipate GLISSON; a third book on the same subject had been published, also in London, in 1647, the *Angliae flagellum seu Tabes anglica* by THEOPHILE DE GARENCIÈRES. BOOT's good clinical observations on rickets, forming chapter 12 of his book, are here reprinted together with a Dutch translation. A comparative study of the descriptions of rickets given by TH. DE GARENCIÈRES, BOOT and GLISSON is much to be desired. In the meanwhile we must mention the three of them in any account of the subject. G. S.

Dorveaux, P. et **Fleur, E.** L'hopital de l'armée de CONDÉ durant le siège de Thionville. *Bull. Soc. Hist. Pharm.*, nº 51, p. 264-270, Paris, 1926. ISIS

Hollä nder, Eugen. Das angebliche Selbstbildnis des ANTON VAN DYCK, *Die Medizinische Welt*, Nr. 1, S. 34-35, 1927. ISIS

Portrait of the Antwerp physician, GUILLAUME MARQUIS.

Leersum, E. C. van. Contribution to the history of the clinical instruction in the Netherlands. *Janus*, 30, 133-151, 1926. ISIS

C'est à WILHELM VAN DER STRAATEN, aussi appelé VERSTRAATEN et STRATENIUS, né à Utrecht en 1593, qu'est due l'idée de la création de leçons de clinique (17.03.1636). L. G.

Pick, Friedel. JOH. JESSENIUS de Magna Jessen, Arzt und Rektor in Wittenberg und Prag, hingerichtet am 21. Juni 1621. Ein Lebens-

bild aus der Zeit des dreissigjährigen Krieges. (*Studien zur Geschichte der Medizin*, 15). VI + 315 S., 12 Fig. im Text, 7 Taf., 1 Beilage. Leipzig, BARTH, 1926. ISIS

Dreihundert Jahre sind verflossen, seit auf einem schwarz verhängten Schaugerüste auf dem Altstädter Ring in Prag siebenundzwanzig führende Männer des böhmischen Aufstandes, der den Auftakt zum dreissigjährigen Kriege bildete, durch Henkershand den Tod fanden. Unter ihnen befand sich der « Medikus und fürtrefflich welt berühmte Orator auch Professor » JESSENIUS, Lehrer der Anatomie und Chirurgie in Wittenberg und Prag, Rektor der Universität daselbst und in Prag, Leibarzt sächsischer Kurfürsten und deutscher Kaiser. Diese Stellungen kennzeichnen die Bedeutung dieses Mannes unter den Zeitgenossen. In der Geschichte der Medizin kommt JESSENIUS neben einer regen publizistischen Tätigkeit im Sinne der Verbreitung der in Italien zutage geförderten Errungenschaften auf dem Gebiete der Anatomie und Chirurgie das Verdienst zu, in Wittenberg und Prag, und zwar hier als erster, Sektionen menschlicher Leichen zu Unterrichtszwecken veranstaltet zu haben, was unter den damals in Deutschland herrschenden Verhältnissen wegen des Widerstandes kirchlicher Kreise und weiter Bevölkerungsschichten ein Wagnis und eine wissenschaftliche Tat bedeutet.

Tricot-Royer. La bibliothèque de VOPISCUS FORTUNATUS PLEMPIUS, professeur de médecine au XVII[e] siècle. (*Recueil des Mémoires couronnés et autres mémoires de l'Académie royale de médecine de Belgique*, t. 22). 112 p. Bruxelles, GOEMARE, 1925. ISIS

Born in Amsterdam 1601; M. D. Bologna 1623; professor and four times Rector magnificus in Louvain where he died in 1671. His library, the catalogue of which is here published, contained 1074 works (including 768 medical works.) G. S.

E. — *Alia.*

Broad, C. D. FRANCIS BACON and scientific method. *Nature*, 118, 487-488, 523-524, 1926. ISIS

Broad, C. D. The philosophy of FRANCIS BACON : an address delivered at Cambridge on the occasion of the BACON tercentenary, 5 October 1926. VI + 68 p. Cambridge, University Press, 1926. ISIS

Frost, Walter. BACON und die Naturphilosophie. (*Geschichte der Philosophie in Einzeldarstellungen*; Abt. V, Die Philosophie der neueren Zeit II. Band 20). Mit einem Bildnis BACONS. 504 p. München, ERNST REINHARDT, 1927. ISIS

Inhalt : I. Teil. FRANCIS BACON. 1. Umrisse des Lebens BACONS und seiner politischen Schicksale. 2. BACONS wissenschaftliche Gesamtpersönlichkeit und geschichtliche Bedeutung. 3. Die Logik BACONS. 4. BACON, der Enzyklopädist. 5. Die Ethik und die Scientia Civilis BACONS. II. Teil. Die

neue Naturphilosophie. 1. Das Ringen der Philosophie mit der Tatsache der modernen Naturwissenschaft. 2. Die ersten Aufgaben der Chemie. 3. LEONARDO DA VINCI. 4. KOPERNIKUS und KEPLER. 5. GALILEI. 6. Die Erneuerung der Atomistik. 7. HUYGHENS und NEWTON. These contents give one an idea of the scope of the book, much broader than its title would suggest. It is apparently not based upon any fresh evidence. The second (and larger) part of it is a sketch of the history of science from the Renaissance to the end of the XVIIth century. Such a plan is very distasteful to me. G. S.

Grotius, Hugo (1583-1645). The jurisprudence of Holland. The text translated with brief notes and a commentary by R. W. LEE. Vol. I., Portrait and tables. Oxford, Clarendon Press, 1926. ISIS

Jovy, Ernest. PASCAL et SAINT-ANGE. JACQUES FORTON, sieur de SAINT-ANGE, ses écrits et ses infortunes. Études pascaliennes. I, 218 p., J. VRIN, Paris, 1927. ISIS

On se rappelle l'accusation calomnieuse d'hérésie lancée en février 1647 auprès de l'archevêque de Rouen contre l'ancien capucin SAINT-ANGE par PASCAL, converti au jansénisme depuis quelques mois, et ses amis ADRIEN AUZOULT et RAOUL HALLÉ DE MONFLAINES (DU MÉNIL); l'affaire, qui dura plus de deux mois, n'est pas à l'éloge de PASCAL qui s'y acharna « avec une tenace hostilité » (L. BRUNSCHVICG). ERNEST JOVY en examine les diverses phases, documents en main, et réhabilite complètement JACQUES FORTON et son livre *La Conduite du jugement naturel*, paru en quatre parties : 1637, 1641, 1643, 1653; cette dernière partie a été publiée par un ancien élève de SAINT-ANGE, le sieur DE BRAQUE (SAINT-ANGE était mort, probablement à Paris, en 1651). — Ce travail très sérieux, dans lequel l'auteur donne quelques renseignements biographiques sur AUZOULT et HALLÉ DE MONFLAINES, complète heureusement les études consacrées à l'affaire SAINT-ANGE par CH. URBAIN (*Rev. d'hist. littér. de la France*, 1895, t. 2, 1-36), et CH. ROBILLARD DE BEAUREPAIRE (*Rev. analyt. des trav. de l'académie de Rouen*, 1899-1900). L. G.

Jovy, Ernest. Un excitateur de la pensée pascalienne. PASCAL et SILHON. Etudes pascaliennes, II. 116 p., J. VRIN, Paris, 1927. ISIS

Dans la liste des lectures dont s'est inspiré PASCAL pour la notation de ses pensées, on ne tient pour ainsi dire aucun compte de JEAN DE SILHON (159. — 1667). ERNEST JOVY estime au contraire que « SILHON a été pour PASCAL, une sorte de modèle, de constant inspirateur, d'excitateur perpétuel ». Les rapprochements de textes des *Pensées* et d'extraits de SILHON empruntés surtout à son *Traité de l'immortalité de l'âme* (1634), et aussi au livre sur *le ministre d'état, avec le véritable usage de la politique moderne* (1643), au traité *de la certitude des connaissances humaines* (1661), au livre des *deux vérités* (1626), ne laissent guère de doutes. JEAN DE SILHON, disciple de BALZAC, était d'ailleurs un esprit tout à fait distingué, ami de DESCARTES, secrétaire de MAZARIN, conseiller d'état de RICHELIEU, et l'un des premiers membres de l'Académie française. L. G.

Kienast, R. JOHANN VALENTIN ANDREÄ und die vier ersten Rosen-

kreutzer-Schriften (Palästra, 152). VII + 248 S. Leipzig, MAYER und MÜLLER, 1926. ISIS

Reviewed by FRITZ BEHREND, *Deutsche Literaturzeitung*, 556-558, 1927.

Prunières, Henri. La vie et l'œuvre de CLAUDIO MONTEVERDI. Edition de bibliophile comprenant la correspondance inédite de CLAUDIO MONTEVERDI, ornée de cinq dessins hors-texte et de dix bandeaux de MAXIME DETHOMAS. 317 p. in- 8°, Libr. de France, Paris, 1926 (50 fr.). ISIS

L'auteur de cet ouvrage s'était déjà mis au premier rang des musicologues français par ses travaux fort importants sur LULLY et l'opéra italien en France avant ce compositeur. Ici, il ne prétend pas nous apporter des documents inédits (malgré ses longues recherches dans les archives italiennes) sur l'œuvre et la vie du génial fondateur de l'opéra; mais cette publication est la première étude d'ensemble sur celui-ci. La partie la plus neuve est celle qui a trait à la musique religieuse de MONTEVERDE, dont la plus grande partie est éparse dans les bibliothèques d'Europe, et dont seul jusqu'ici CHARLES VAN DEN BORREN avait commencé l'exploration. PRUNIÈRES met admirablement en lumière la dualité du style qui y règne, tantôt nettement archaique, tantôt se rapprochant de la pompe profane de l'opéra. — Il s'attache très heureusement à faire ressortir des aspects également peu connus, quoique fort importants, du compositeur, comme dans son œuvre de madrigaliste, ou encore de compositeur de ballets (son *Ballo delle Ingrate* est le seul exemple qui nous soit parvenu complet de « Ballet de cour » à la française). Il nous le montre également créant des genres nouveaux, comme avec le *Combattimento di Tancredi e di Clorindo*, œuvre intermédiaire entre la cantate et le drame lyrique, ou encore écrivant de la musique pour des tournois que donnait le duc de Parme, etc.

Les premières représentations du célèbre *Orfeo*, de l'*Arianna*, à la cour des ducs de Gonzague, sont évoquées d'une façon à la fois très vivante et documentée, ainsi que les débuts du théatre public de musique à Venise, avec l'exécution du *Ritorno d'Ulisse* et de l'*Incoronazione di Poppea*. Mais pardessus tout, la personnalité si complexe, si moderne du compositeur est admirablement dépeinte dans cet ouvrage. PRUNIÈRES nous montre MONTEVERDE tour à tour virtuose, chanteur, maître de chapelle, alchimiste, engagé dans des expéditions guerrières, prêtre à la fin de sa vie, etc.

Le volume se clôt par la publication intégrale de toute la correspondance de MONTEVERDE connue jusqu'à ce jour. RAYMOND PETIT.

Prunières, Henri. MONTEVERDI. His life and work. Translated from the French by MARIE D. MACKIE. 293 p. J. M. DENT, London, 1926. *Vide supra*. ISIS

Tönnies, Ferdinand. THOMAS HOBBES' Leben und Lehre. 3 Verm. Aufl. (Frommanns Klassik. d. Philosophie, hrsg. von G. MEHLIS. II). XXVII + 316 p. Stuttgart, Fr. FROMMANN, 1925. ISIS

Reviewed by WERNER BECKER, *Deutsche Literaturzeitung*, 2584-2588, 1926.

Young, Robert Fitzgibbon. A Czech humanist in London in the seventeenth century : JAN SICTOR ROKYCANSKY (1593-1652). 30 p. London, EYRE and SPOTTISWOODE, 1926. ISIS

XVIIth Century (second half)

A. — *Mathematics.*

Cajori, Florian. Ce que NEWTON doit à DESCARTES. *L'Enseignement mathématique*, 25, 7-11, 1926. ISIS

Newton fut profondément influencé par DESCARTES durant ses années de maturation : c'est par la Géométrie de DESCARTES que NEWTON s'initie à la géométrie ; c'est pour faire quelques expériences sur la théorie des couleurs de DESCARTES que NEWTON se procure son premier prisme ; il explique le phénomène fondamental de la réflexion totale à l'aide de la loi de réfraction de DESCARTES (et de SNELL.) L. G.

Einstein, Albert. NEWTONS Mechanik und ihr Einfluss auf die Gestaltung der theoretischen Physik. *Die Naturwissenschaften*, 15 Jahrg., 273-276, 1927. ISIS

James, T. E. Dwelling-places, portraits, and medallic illustrations of NEWTON. *Nature*, 119, 465-467, 1927. ISIS

Laue, Max v. Aus NEWTONS Optik. *Die Naturwissenschaften*, 15. Jahrg., 276-280, 1927. ISIS

Loria, Gino. Il periodo di storia delle scienze dalla morte di GALILEO a NEWTON. Parte 2a : da BACONE all' alba del XVIII secolo. *Scientia*, 40, 205-216, 1926; trad. franç., supplém., 61-70. ISIS

La première partie de cet article de Loria a été signalée (*Isis*, 8.760). L'auteur rappelle ici d'abord les mérites de ROGER BACON, GUILLAUME GILBERT, ROBERT BOYLE, JEAN NEPER, ISAAC BARROW et JEAN WALLIS, puis s'occupe plus longuement des travaux de NEWTON, et enfin de CHRISTIAN HUYGHENS et de LEIBNIZ. L. G.

(Newton, Isaac). Supplement to *Nature*, March 26, 1927, p. 21-48, 16 fig., devoted to NEWTON to commemorate the second centenary of his death. ISIS

Contents : E. W. BARNES, The bicentenary of NEWTON's death ; F. S. MARVIN, NEWTON's place in science ; J. H. JEANS, ISAAC NEWTON ; Sir FRANK DYSON, NEWTON's work in astronomy ; HORACE LAMB, NEWTON's work in mechanics ; Sir J. J. THOMSON, NEWTON's work in physics ; L. J. MORDELL, NEWTON's work in pure mathematics ; Sir RICHARD GLAZEBROOK, NEWTON's work in optics.

Smith, David Eugene. Two unpublished documents of Sir ISAAC NEWTON. 18 p., 7 pl. (ISAAC NEWTON, 1642-1727.A memorial volume issued by the Mathematical Association, 1927). ISIS

« The following documents, are mathematical to only a slight degree. They show, however, something of the little known side of NEWTON's mind — first as it appeared when he was a boy or a young man, and later as it showed itself when he was approaching old age, in the period when he was Master of the Mint. » These documents are owned by the J. Pierpont Morgan Library in New York. The first is a notebook dated 1659 which is here analyzed and described, extracts being quoted. The second is entitled « A scheme of a commission for prosecuting counterfeiters and diminishers of the current coyn ». Many pages of both documents are here reproduced. The Pierpont Morgan Library owns nine other documents in NEWTON's hand, all of which were written during the later years of his life. G. S.

Trevelyan, G. M. ISAAC NEWTON. Letter to the editor, *Times Literary Supplement*, Thursday March 24, 1927. ISIS

B. — *Physical Sciences and Technology.*

Bouvet, M. Les laboratoires autorisés au XVII^e siècle. *Bull. Soc. Hist. Pharm.* Paris 1925; No 45, p. 10-16; No 46, p. 55-60. ISIS

La préparation des remèdes secrets n'était pas libre au XVII^e siècle. Elle était localisée dans quelques laboratoires dûment autorisés dont l'auteur parle en se basant sur une bibliographie de premier ordre. Parmi ces laboratoires il faut citer ceux de ROCHAS ouvert en 1646 et de MARGUERITE CHARPENTIER ouvert en 1663, soumis au contrôle de la Cour des Monnaies qui veut y empêcher la fabrication de la fausse monnaie. L'affaire des poisons et l'édit de 1682 qui interdit la préparation de ces derniers autre part que chez les apothicaires permet à l'auteur de nous faire connaître quelques unes des intrigues monstrueuses et tragiques nouées à la Cour du Roi Soleil.

Le laboratoire de DEL CARETTO s'ouvre en 1685, celui de NICOLAS LEMERY en 1686. C'est dans ce dernier que se créent et se traitent quelques uns des plus beaux chapitres de la chimie. Rapidement, mais aidé de documents précieux, M. BOUVET parle des succès éclatants du chimiste français. Il cite les édits royaux qui présidèrent à la fondation du laboratoire de la rue Galande et parle ensuite des laboratoires médicaux d'HELVÉTIUS (1688) et des Capucins AIGNAN et ROUSSEAU, inventeurs du baume tranquille et du laudanum. Le laboratoire du médecin espagnol CARAFFE (1700) et celui du sieur DE TROUVILLE fabricant d'or potable complètent cette liste des laboratoires officiels et célèbres du XVII^e siècle. L. L.

Boyle, Robert. Electricity and magnetism, 1675-1676. (Old Ashmolean Reprints, 7.) IV + 38 p., III + 20 p. Oxford, R.T. GUNTHER, Magdalen College, 1927. ISIS

Darmstaedter, Ludwig. JOHANN RUDOLPH GLAUBER. *Chemiker-Ztg.* 50, 585-586, 1926. ISIS

Davis, Tenney L. KUNCKEL's discovery of fulminate. *Army Ordnance*, 7, 62, 1926. ISIS

The posthumous *Laboratorium Chymicum* (Hamburg and Leipzig, 1716) of JOHANN KUNCKEL von Loewenstern (1630-1703) contains, on pages 213 and 214, an account of an experiment in which fulminate of mercury was produced, and an account of the explosion which resulted. The preparation of the substance was described in 1800 by EDWARD HOWARD in a paper before the Royal Society, but sixty years more elapsed before ALFRED NOBEL and his father discovered that nitroglycerine could be detonated by means of fulminate. The development of modern high explosives dates from the last mentioned discovery. T. L. D.

Gunther, R. T. The first public chemical laboratory in England. *Nature*, 119, 492, 1927. ISIS

Chemical laboratory at the University of Oxford, 1683.

Koch, Richard. War GEORG ERNST STAHL ein selbständiger Denker ? *Archiv für Geschichte der Medizin*, 18, 20-51, 1926. ISIS

Le nom de GEORGES ERNEST STAHL n'est certes pas ignoré des chimistes et des médecins qui savent que certaines hypothèses du professeur de Halle ont exercé au 18eme siècle une énorme influence sur le développement de leurs sciences; cependant si le nom a survécu à l'oubli, l'œuvre même de ce grand savant est aujourd'hui peu étudiée, et il est curieux de noter que bien que LEIBNIZ ait cru devoir combattre la doctrine contenue dans un de ces principaux ouvrages *la vraie théorie médicale*, les historiens de la philosophie n'ont fait à STAHL aucune place. (La polémique entre STAHL et LEIBNIZ, qui est d'ailleurs peu connue, a été publiée par STAHL après la mort de LEIBNIZ sous le nom de *Negotium otiosum*) — L'auteur nous donne une analyse fort intéressante de ce travail magistral ; il replace l'animisme de STAHL dans le milieu philosophique et médical où cette théorie s'est formée et propagée; il montre ce que STAHL doit aux anciens, aux savants de la Renaissance et à ses contemporains; il éclaire l'attitude intellectuelle de STAHL en la comparant à celle de DRIESCH ; enfin, il se demande si STAHL, oublié par la postérité, fut vraiment un penseur original. A une telle question, il semble que l'on puisse répondre « oui » : la forte culture générale de STAHL, qui lui a permis de s'assimiler les systèmes de l'antiquité et des temps modernes, n'a pas altéré sa personnalité intellectuelle qui bien au contraire s'est affirmée dans une œuvre dont certaines parties mériteraient encore d'être méditées.

HÉLÈNE METZGER.

Snow, A. J. Matter and gravity in NEWTON's physical philosophy. A study in the natural philosophy of NEWTON's time. 256 p. Oxford University Press, American Branch, New York, 1926. ($ 2.50). ISIS

This study of NEWTON's natural philosophy is opportune at a time when the corner stone of that philosophy, the law of gravitation, is put into the crucible because of the very progress in experimental knowledge which it initiated so brilliantly. The subject is divided as follows : 1. The atomic revival (GASSENDI, BOYLE, DESCARTES, GALILEO), this being a necessary introduction; 2. Newtonian atomism, including NEWTON's criticism of

Cartesian physics; 3. NEWTON's doctrine of gravity; 4. NEWTON's metaphysical doctrine of gravity; 5. The role of mathematics and hypothesis in NEWTON's physics. The whole book, clearly thought out and written, is a good introduction to the study of XVIIIth century science, or we might say to the study of modern science. G. S.

C. — *Natural Sciences.*

Cole, Rufus. FRANCESCO REDI (1626-1697), physician, naturalist, poet. *Annals of Medical History*, 8, 347-359, 1926. ISIS

Giessberger, H. Das Ragusanische Erdbeben von 1667. *Münchener Geographische Studien*, 28. Stuck, 74 p., 1 sketch map, 1913. ISIS

This study is essentially an attempt to interpret the great earthquake at Ragusa, 1667, in terms of modern seismological science. It includes, however, excerpts in translation of interesting contemporary accounts, notably that of the Venetian, FRANCISCO TRAVAGINI. Although TRAVAGINI's theory of the cause of earthquakes was influenced by the Aristotelian doctrine of explosions of gases in the earth's interior, his conception of the further development of seismic phenomena after the initial shock is strikingly modern. He conceived of the seismic impulses as spreading out radially in all directions like an expanding circle. J. K. W.

Hooke, Robert. Extracts from HOOKE's Micrographia. First printed in London in 1665, re-issued by permission of the Alembic Club of Edinburgh, with additional observations on the cellular structure of plants as revealed for the first time by the microscope constructed by ROBERT HOOKE of Christ Church in Oxford. (Old Ashmolean Reprints, 6.) IV + 60 p. Oxford, R. T. GUNTHER, Magdalen College, 1926. ISIS

Lauvrière, Emile. Les premières explorations en Louisiane. *Revue de l'histoire des colonies françaises*, 14e Année, 305-373, 1926. ISIS

Brief sketch of the explorations of the Spaniards and of MARQUETTE and JOLLIET, followed by a more extended résumé of the exploits of LA SALLE. The author concludes by pointing out that LA SALLE has not received adequate commemoration in France. J. K. W.

Letts, Malcolm (*editor*). FRANCIS MORTOFT: his book, being his travels through France and Italy, 1658-1659. London, Hakluyt Society, Series II, vol. 57. XXXIV + 216 p., 2 maps, 1 plate, 1925. ISIS

« An honest, straightforward narrative of a typical grand tour, with not a few touches of shrewdness and humour which raise it above the average travel-diary of the period. » The author, of whom almost nothing certain is known, traveled from Calais to Rome by way of Paris, western and southern France, the Riviera, Genoa, Pisa and Florence; and returning through Venice to Zurich, where the diary suddenly stops. Of particular interest is MORTOFT's

description of Rome. The work is carefully edited from a MS. in the British Museum, with an extensive introduction, very full footnotes, bibliography and route maps. J. K. W.

Lindeström, Peter Martensson (1632-1691). Geographia Americae, with an account of the Delaware Indians, based on surveys and notes made in 1654-1656. Translated from the original manuscript with notes, introduction and an appendix of Indian geographical names with their meanings by AMANDUS JOHNSON. XLIV + 418 p., 43 illust., 8 maps, and documents. Philadelphia, The Swedish Colonial Society, 1925. ISIS

Impelled by the love of adventure LINDESTRÖM came out to New Sweden in 1653; here he was appointed engineer and Clerk of Court. His duties led him to make a thorough exploration of the shores of the Delaware River, in the course of which he constructed a detailed map and compiled a vast quantity of information on the Indians, preserved in the Geographia Americae. In 1656 he returned to Sweden. J. K. W.

Pernot, Hubert (*editor*). Voyage en Turquie et en Grèce du R. P. ROBERT DE DREUX, aumonier de l'ambassadeur de France (1665-1669). *Collection de l'Institut Néo-Hellénique de l'Université de Paris*, Fascicule 3). XII + 202 p. Paris, Les Belles Lettres, 1925. ISIS

The author accompanied the French ambassador DE LA HAYE-VANTELET on the occasion of the latter's undertaking a « delicate and perilous » mission from LOUIS XIV to the Sultan. DE DREUX's account of his experiences, not written for publication, is here edited for the first time from a manuscript copy in the Bibliothèque Nationale. It furnishes a vivid, if somewhat naïve, picture of some of the European provinces of the Turkish empire in the late 17th century. J. K. W.

Villiers, Le Baron **Marc de** (*editor*). Extrait d'un journal de voyage en Louisiane du Père PAUL DU RU (1700). *Journal de la Société des Américanistes de Paris*, N. S. 17, 119-135, 1925. ISIS

This extract, the only fragment we have of DU RU's journal, was made by the geographer CLAUDE DELISLE (1644-1720). « DU RU was one of the missionaries who accompanied IBERVILLE. » His notes on the Indians are of interest. J. K. W.

D. — *Medical Sciences.*

Gall, Piero. Il caso CHAMBERLEN-MAURICEAU. *Riv. di storia d. sc. med. e natur.*, 17, 189-202, 1926. ISIS

Il s'agit d'un épisode de l'histoire du forceps. Cet instrument avait été inventé vers le début du XVII^e^ siècle par PETER CHAMBERLEN l'ainé (1560-1631). En 1670, HUGH CHAMBERLEN l'ainé, né en 1630, vint à Paris pour essayer d'y vendre le secret de l'instrument. Il eut une controverse avec FRANÇOIS MAURICEAU (1637-1709) qui lui jeta le défit d'accoucher une

primipare de trente huit ans dont le cas était d'ailleurs extrêmement délicat; CHAMBERLEN n'y réussit pas, et rentra en Angleterre avec ses crochets ; il y traduisit deux ans après le *Livre des accouchements* de MAURICEAU. L. G.

Owen, G. R. The poore's plague and Mr. PEPYS. *Annals of Medical History*, 8, 249-264, 1926. ISIS

Robinson, Herbert Spencer. EDWARD EMILY, the first Harveian orator. *Medical Life*, 34, p. 30-36, 1927. ISIS

Biography of EDWARD EMILY (1617-1657) who delivered the first Harveian oration in 1656. G. S.

Sonnié-Moret, P. Une amie de la médecine, ennemie des médecins. La marquise de SÉVIGNÉ. *Paris médical*, 1926, 6. 03, IV-XII, 20.03, I-VI, 3.04, I-IX, 10.04, I-V, 1.05, I-XIV. ISIS

A. Le mal que Madame DE SÉVIGNÉ a dit des médecins. B. La marquise DE SÉVIGNÉ aux eaux et à table. C. La marquise et les remèdes de bonne femme. D. La marquise et la médecine sympathique. E. La marquise DE SÉVIGNÉ et les empiriques.

Wibergh, Julius. THOMAS SYDENHAM, 1624-1689. Medicinsk-historisk Studie. Copenhagen, LEVIN und MUNKSGAARDS Forlag, 1926. ISIS

E. — *Alia.*

Altkirch, Ernst (*pseud.*) Maledictus und Benedictus. SPINOZA im Urteil des Volkes und der Geistigen bis auf CONSTANTIN BRUNNER. 211 S. Leipzig, FELIX MEINER, 1924. ISIS

Bowrey, Thomas (c. 1650-1713). The Papers of THOMAS BOWREY, 1669-1713, discovered in 1913 by JOHN HUMPHREYS, and now in the possession of Lieut.-Colonel HENRY HOWARD, edited by Sir RICHARD CARNAC TEMPLE. Part I., Diary of a six weeks' tour in 1698 in Holland and Flandres. Part II, The Story of the Mary Galley, 1704-1710. XXX + 398 p., 8 figs., 5 maps, 9 plates. The Hakluyt Society, Second Series, No. 58. London, 1927. ISIS

Part 2 constitutes « what I believe is unique, the entire history of a ship in the early eighteenth century, from the contract for building her and the first meeting of her proposed owners, her voyage to Java and India and back, and her final end, even to the settlement of her accounts. Her papers are further of great importance to the historians of ship-building, as among other things there have been preserved the specifications and accounts of her construction, documents of that kind being rarely met with relating to small ships built in the seventeenth and early eighteenth centuries. »

Gouhier, Henri. La première polémique de MALEBRANCHE. *Rev. d'hist. de la philosophie*, 1, 23-48, 168-191, 1927. ISIS

Histoire de la polémique qu'eut à soutenir MALEBRANCHE dès l'apparition du T. I. de la *Recherche de la vérité* (1674) avec SIMON FOUCHER (Dijon, 1644,03,01 — Paris, 1696,04,27) qui ouvrit la discussion avec sa *Critique de la Recherche de la vérité où l'on examine en même temps une partie des principes de* M. DESCARTES; *lettre par un académicien* (1675), polémique qui dura quatre ans (FOUCHER réimprima d'ailleurs encore en 1693 ses *Dissertations sur la recherche de la vérité*), et dans laquelle intervint en faveur de MALEBRANCHE, dom ROBERT DESGABETS (1620? —1678,03,13) avec une *Critique de la critique de la recherche de la vérité* (1675). Selon l'abbé F. RABBE, historien de FOUCHER (*L'abbé Simon Foucher*, 1867), LEIBNIZ aurait joué un rôle actif dans cette polémique qui se place pendant son séjour à Paris (1672-76), en poussant FOUCHER dans la voie de l'anticartésianisme. GOUHIER fait justice de cette assertion. — Pour les travaux antérieurs de GOUHIER sur Malebranche, voir *Isis*, IX, 522. L. G.

Graham, Walter. The beginnings of English literary periodicals. A study of periodical literature, 1665-1715. IV + 92 p., facsimiles. New York, Oxford University Press, 1926. ISIS

Gunther, R. T. The diary and will of ELIAS ASHMOLE. Edited and extended from the original manuscripts. (Old Ashmolean Reprints, 2.) IV + 183 p., 2 pl. Oxford, R. T. GUNTHER, Magdalen College, 1927. ISIS

Hallays, André. Les PERRAULT. (Essais sur le XVII^e siècle). Portraits and plates. 2nd edition. Paris, PERRIN, 1926. ISIS

Hembt, P. H. The influence of early science on formative English. *Journal of Chemical Education*, 3, 1051, 1926. ISIS

A discussion of the influence of English men of science of the period, 1645-1675, on the history of English literature and of their effect upon the style of English prose composition. The *Philosophical Transactions* holds a unique place in the history of journalism, for it gave rise to the monthly magazine by establishing its monthly appearance, size, form, and type. « There had been nothing like it in mechanical make-up; no other periodical of Europe had been so favored by the government, so encouraged by the King; no other had such weighty matter discussed by great men. Its circulation was large and constantly growing. It was published in English when European scholars requested it to be put into the scholarly Latin... The early scientists... dignified the English language and put it on equality with the great tongues of Europe. They shortened the sentence and made it clear and exact. They developed a coherent paragraph and a coherent theme. They put an end to ' the delightful deceits of Fables ' as Sprat characterized the style of Sir THOMAS BROWNE. And the style of RICHARD BURTON, who for literary effect ' pillaged antiquity ' to heighten his hypochondria, became obsolete. All these things and more, too, were accomplished in three decades by the early English scientists in the establishment of modern prose. » T. L. D.

Jaegher, Karel de (S. J.). Le père VERBIEST, auteur de la première

grammaire mandchoue. *T'oung Pao*, 22, 189-192, 1923. ISIS

Le fameux Jésuite FERDINAND VERBIEST (1623-88) fut incontestablement l'auteur des *Elementa linguæ tartaricæ* publiés anonymement par THÉVENOT. P. PELLIOT suggère que VERBIEST fut peut-être aussi l'auteur de la grammaire chinoise, éditée par THÉVENOT. Voir aussi *T'oung Pao*, 24, 64-66, 1925. G. S.

Lévy-Bruhl, Lucien. Les tendances générales de BAYLE et de FONTENELLE. *Rev. d'hist. de la philosophie*, 1, 49-68, 1927. ISIS

BAYLE et FONTENELLE sont les vrais précurseurs philosophiques du XVIII[e] siècle. « Les idées de BAYLE, si elles ne sont pas fortement liées, sont cependant cohérentes. Elles gravitent toutes autour d'un certain nombre de points principaux... qui ont pour centre commun la question des rapports de la révélation et de la raison avec toutes les conséquences qui découlent de la solution qu'on donne à ce problème... BAYLE ne va à rien de moins qu'à désagréger le système de croyances et de principes communément acceptés par ses précédesseurs et par ses contemporains ». FONTENELLE, cartésien, mais qui n'adhère pas à la métaphysique de DESCARTES a « le mérite d'avoir eu, l'un des premiers, l'idée nette du progrès scientifique et du développement intellectuel de l'humanité soumis à des lois »; il complète BAYLE. L. G.

XVIIIth Century (whole and first half)

A. — *Mathematics.*

Cajori, Florian. FREDERICK THE GREAT on mathematics and mathematicians. *American Mathematical Monthly*, 34, 122-130, 1927. ISIS

Cajori, Florian. MADAME DU CHÂTELET on fluxions. *Mathematical Gazette*, 13, p. 252, December 1926. ISIS

Apropos of Madame DU CHÂTELET's (1706-49) French translation of the *Principia*, posthumously published in 1759. There was much discussion as to whether NEWTON's variables reached their limits. Madame DU CHÂTELET seemed to admit with JURIN, but against ROBINS, PEMBERTON, and D'ALEMBERT, that the limits could actually be attained. G. S.

(Euler). LEONHARDI EULERI opera omnia. Ser. I, vol. 14 : Commentationes analyticae ad theoriam serierum infinitarum pertinentes. Edited by E. BOEHM and G. FABER. x + 617 p. Leipzig, TEUBNER, 1925. ISIS

Hoppe, Edmund. LEONARD EULERS Stellung zur Relativität. *Zeitschr. math. nat. Unterr.* 54, 181-184, 1923. ISIS

Muller, Maurice. Essai sur la philosophie de JEAN D'ALEMBERT. 314 p., PAYOT, Paris, 1926. ISIS

Après un très court chapitre de biographie où D'ALEMBERT est placé dans son milieu, l'auteur analyse sa théorie de la connaissance, en s'appuyant

non seulement sur les écrits philosophiques de D'ALEMBERT : *Discours préliminaire de l'Encyclopédie* (1751), *Éléments de philosophie* (1759), *Éclaircissements* à ces Éléments (1767), mais également sur le discours préliminaire de son *Traité de dynamique* (1743), où s'annonçait déjà sa curiosité de la spéculation philosophique. Voici quelques unes de ses conclusions : « La véritable originalité de D'ALEMBERT, parmi les philosophes sensualistes du XVIII^e S., est d'avoir été avant tout un épistémologiste... Parmi ses contemporains, sans doute MAUPERTUIS et LAMBERT ont eu une action un peu analogue à la sienne. Mais on ne peut parler d'une influence de MAUPERTUIS ou de LAMBERT (qui vivait à Berlin) sur D'ALEMBERT... HUME également n'a pas eu d'influence sur D'ALEMBERT... Un CONDILLAC n'aura pas grande influence sur lui..., l'influence de DIDEROT semble assez grande... D'ALEMBERT applique les méthodes philosophiques qu'il tenait de LOCKE à la science, ce qui le distingue de ses contemporains français vivant en France... Une des originalités de D'ALEMBERT réside... en la position qu'il a prise vis à vis de la connaissance, de l'envisager non comme étant simplement l'image d'une réalité ontologique, mais comme résultant d'un travail spirituel sur les données de l'expérience sensible... Nous avons vu le refus de D'ALEMBERT d'envisager de face la notion de cause, donner à sa philosophie de la mécanique une allure un peu artificielle et réduire sa mécanique à une sorte de cinématique. Mais l'emploi du principe de raison, si fréquent, et l'affirmation physique du parallélisme entre le côté cinématique et le côté dynamique suppléent en partie à ce que l'analyse dalembertienne de la causalité a de sommaire... En fait, c'est le principe de raison, sous la forme très générale que nous lui avons donnée (rien ne se fait sans raison) qui est l'*a priori* fondamental qui domine ses recherches ». L. G.

B. — *Physical Sciences and Technology.*

Ashton, T. S. The discoveries of the DARBYS of Coalbrookdale. *Transactions of the Newcomen Society*, 5, 9-14, London, 1926. ISIS

« The first DARBY used coke, in place of charcoal, in the production of castings; his son converted this coke-smelted iron into malleable iron with charcoal : the CRANAGES and HENRY CORT substituted coke for charcoal in this final process. By so doing they broke the last shackle binding the industry to the woodlands, and enabled it to renew its youth on the coalfields of the Midlands, Yorkshire, and South Wales. The work begun by ABRAHAM DARBY in 1709 was completed by HENRY CORT in 1784. » See also J. W. HALL's Notes on Coalbrookdale and the DARBYS, classified under Technology.

Brunet, Pierre. Les physiciens hollandais et la méthode expérimentale en France au XVIII^e Siècle. IV + 154 p., ALBERT BLANCHARD, Paris, 1926. ISIS

Dans une longue introduction de 37 p., d'ailleurs un peu confuse, l'auteur fixe sa conception de l'histoire de la pensée scientifique. Il ne cherche pas à « élaborer de vastes interprétations, étayées sur des expositions d'ensemble », et dans lesquelles on laisse de côté tout l'accessoire. Il ne veut pas non plus d'un sec recensement des faits, d'une recherche de la paternité des grandes découvertes. Les découvertes, ou mieux, les problèmes qui leur donnent naissance, ne doivent être détachés, ni de leurs antécédents immédiats,

ni de toute l'ambiance dans laquelle ils ont pris naissance, et BRUNET insiste avec raison sur « le caractère collectif du problème »; à cette idée du problème, il ajoute d'ailleurs la notion de l'école. Et son mémoire proprement dit illustre cette manière de voir. Dans un premier chapitre sur le développement de la méthode expérimentale en Hollande au XVIII^e siècle, il montre comment en Hollande, premier berceau du cartésianisme, les savants s'inquiétaient, dès la fin du XVII^e siècle, de compléter par la méthode expérimentale la méthode apportée par DESCARTES, et s'orientaient sous l'influence de la philosophie anglaise et de NEWTON : LEEUWENHOECK, BOERHAVE, s'GRAVESANDE PIERRE et JEAN MUSSCHENBROECK tournent résolument le dos à toute discussion métaphysique et s'accordent sur la nécessité d'un recours de plus en plus strict aux procédés expérimentaux dont ils fixent les conditions, les limites, les rapports. BRUNET étudie ensuite l'influence, au XVIII^e siècle, de cette physique expérimentale hollandaise ainsi constituée, notant d'ailleurs que sa pénétration avait été préparée par l'œuvre de PASCAL, de MARIOTTE, et aussi par de légères infiltrations directes de l'influence anglaise. La réputation de l'école hollandaise était telle que les étudiants, les jeunes savants allaient entendre les leçons des savants hollandais dont ils rapportaient la méthode, traduisaient leurs livres, établissaient des laboratoires (NOLLET, DU FAY, DESLANDES, SIGAUD DE LA FOND, LA METTRIE, ELIE DE JONCOURT, ALLAMAND, etc.) — Malheureusement, non seulement ce travail intéressant manque d'un index, mais il n'a même pas de table des matières ! L. G.

Mieli, Aldo. Un nemico delle teorie corpuscolari al principio del sec. XVIII : MARTINO POLI. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 106-108, 1927. ISIS

MARTINO POLI was born at Luca in 1662; he was first established as chemist and pharmacist to the Pontifical court, but proceeded in 1702 to Paris, to offer a military secret to LOUIS XIV. We don't know what that secret was but he obtained a pension and became a member of the Académie des Sciences. He died in Paris in 1771. His only published work is : *Il trionfo degli acidi vendicati dalle calunnie di molti moderni*; *Opera filosofica, e medica fondata sopra de' Principii Chimici, & adornata di varii esperimenti*; *Contro il Sistema, e Prattica delli Moderni Democritici, & Epicurei Riformati*, XXIV + 464 p., Rome 1706. MIELI gives a brief analysis of that work, which is of no special interest except as an example of empirical reaction against chemical theories. G. S.

C. — *Natural Sciences.*

Dept, Gaston G. La compagnie d'Ostende. Voyages et projets de colonisation. *Bulletin de la Société d'histoire et d'Archéologie de Gand*, 34-55, 1926. ISIS

Egede, Hans. Relationes fra Grönland 1721-36 og. Det gamle Grönlands ny Perlustration 1741, udgiune af LOUIS BOBÉ. Constituting Meddelelser om Grönland, Bind 54, Copenhagen, 1925. ISIS

Fordham, Sir George. La cartographie des routes de France au

XVIII^e siècle. (Extrait du *Bulletin de la Section de Géographie*, 1925, p. 69-86). 22 p., 5 plates, 3 maps, Paris, 1926. ISIS

Primarily a cartobibliographical study of the semi-official road guides published in the eighteenth century in France and of the road maps which during the latter part of the century were based essentially on the great CASSINI map. J. K. W.

Malmeström, Elis. CARL VON LINNÉS religiösa askadning. XXV + 256 S. Stockholm, Svenska Kyrkans Diakonistyrelses Bokförlag, 1926. ISIS

Malmeström, Elis. LINNÉS religionsfilosofiska betraktelser i företal och inledningsord i Systema naturae. Särtryck ur Kyrkohist. Årsskrift 1925. 44 p. Uppsala, ALMQUIST & WIKSELL, 1926. ISIS

Malmeström, Elis. LINNÉ som kulturpersonlighet. Nagra Linné-Studier. 143 S. Uppsala, J. A. LINDBLAD, 1925. ISIS

Stevens, Henry N. LEWIS EVANS, his map of the Middle British Colonies in America. A comparative account of eighteen different editions published between 1755 and 1814. Second edition with numerous corrections and additions including some account of his earlier map of 1749. 58 p., 24 facs., maps. London, HENRY STEVENS, Son, and STILES, 1920. (Also : LEWIS EVANS, his map of 1752 recently brought to light (with a facsimile of the same). Additional notes to the second edition. London 1924). ISIS

Professor W. M. DAVIS in an address before the American Association for the Advancement of Science and the Association of American Geographers in Cincinnati in 1923 (see *Isis*, 8, 626) referred to LEWIS EVANS (1700-1756) as « certainly the leading American geographer of his time. » This volume is a careful cartobibliographical study of EVANS's maps of the middle British colonies with slightly reduced facsimiles of several of the more important ones. That EVANS had a very clear conception of the principal physiographic features between the Alleghany plateau and the coast is shown in the legends on the maps of 1749 and 1752 as well as in the Analysis of the map of 1755, which was printed by B. FRANKLIN and D. HALL. In both of these places EVANS also gives some interesting notes on meteorology and electrical phenomena, pointing out that «all our great storms begin to leeward. Thus a northeast storm will be a day sooner in Virginia than in Boston. » Later maps based on those of EVANS are interesting for what they reveal of the gradual advance of settlement across the Appalachians and into the Ohio and Great Lakes region. J. K. W.

(Ziegenbalg, Bartholomaeus. 1683-1719). Malabarisches Heidenthum. Herausgegeben und mit Indices versehen von W. CALAND. *Verhandelingen der Koninklijke Akademie van Wetenschappen te*

Amsterdam. Afdeeling Letterkunde, Nieuwe Reeks, Deel 25, 292 S., 1926. ISIS

BARTHOLOMAEUS ZIEGENBALG, born in 1683 in Pulsnitz, Upper Lusatia, reached in 1706, as Royal Danish missionary, Trankebar on the coast of Coromandel, founded there the East Indian Protestant Mission, for which he labored until his death in 1719. He knew Tamil well enough to write various works in that language. The present work, his magnum opus, is here printed from the unpublished MS. of the Missionsbibliothek in Halle. The editor has added numerous indices : to the yugas, nakshatras, names of days, signs of zodiac, year-names, musical instruments, Tamil and Sanskrit quotations, etc. G. S.

D. — *Medical sciences*.

Castro, J. Paul de. A forgotten Salisbury surgeon, EDWARD GOLDWYRE. *Times Literary Supplement*, January 13, 1927. ISIS

Edinburgh, University of. Bicentenary of the faculty of medicine, 1726-1926. Records of the celebration. 124 p. Edinburgh, JOHN THIN, 1926. ISIS

Miller, William Snow. ABRAHAM CHOVET. *Annals of Medical History*, 8, 375-393, 1926. ISIS

English anatomist, born in 1704; practised in the West Indies; later in or after 1770, in Philadelphia, where he died in 1790. G. S.

E. — *Alia*.

Babinger, Franz. GOTTLIEB SIEGFRIED BAYER (1694-1738), ein Beitrag zur Geschichte der morgenländischen Studien im 18. Jahrhundert. 85 p. München, J. SCHÖN, 1915. ISIS

Reviewed by P. PELLIOT, *T'oung Pao*, 20, 361-362, 1921.

Febvre, Lucien. Langue et nationalité en France au XVIII^e^ siècle. *Revue de Synthèse historique*, 42, 19-40, 1926. ISIS

Apropos of the publication of Vol. VII of BRUNOT's *Histoire de la langue française des origines à* 1900, 360 p., Paris, COLIN, 1926.

Gaquère, abbé **François**. La vie et les œuvres de CLAUDE FLEURY. (1640-1723). Préface de S. G. Monseigneur JULIEN, Évêque d'Arras. Paris, DE GIGORD, 1925. ISIS

Historien français, dont l'œuvre la plus considérable fut cette Histoire ecclésiastique, en 20 vol., qui parut de 1690 à 1720.

Hansen, Allen Oscar. Liberalism and American education in the

eighteenth century. With an introduction by EDWARD H. REISER. XXV + 317 p. New York, MACMILLAN, 1926. ISIS

Reviewed by M. W. JERNEGAN, *American Historical Review*, 32, 658, 1927.

Lenoir, Raymond. Les historiens de l'esprit humain. FONTENELLE, MARIVAUX, LORD BOLINGBROKE, VAUVENARGUES, LA METTRIE. VIII + 174 p., Paris, ALCAN, 1926. ISIS

Lloyd, James Hendrie. Dr. BERNARD DE MANDEVILLE and his Fable of the Bees. *Annals of Medical History*, 8, 265-269, 1926. ISIS

Mornet, Daniel La pensée française au XVIII^e siècle. Paris, ARMAND COLIN, 1926. ISIS

Peloux, Vicomte **Charles du.** Répertoire général des ouvrages modernes relatifs au dix-huitième siècle français, 1715-1789. 306 p. Paris, ERNEST GRUND, 1926. ISIS

Reviewed in *American Historical Review*, 32, 357, 1927.

Smith, Edgar Fahs. Early science in Philadelphia. 12 p. (no place or date; received in Jan. 1927). ISIS

Delightful notes on JOHN BARTRAM, BENJAMIN SMITH BARTON, THOMAS NUTTALL, Doctor CHOVET, DAVID RITTENHOUSE, FRANKLIN of course and his collaborator EBENEZER KINNERSLEY, JOHN DE NORMANDIE, BENJAMIN RUSH, whose syllabus of chemistry was the first textbook published by an American in America (1770), ALEXANDER WILSON, etc. Philadelphia may be justly proud of her share in the upbuilding of America. G. S.

Turberville, Arthur Stanley. English men and manners in the 18th century. An illustrated narrative. XXIII + 531 p, Oxford, Clarendon Press, 1926. ISIS

Walker, Frank Deaville. WILLIAM CAREY (1761-1834), missionary, pioneer and statesman. 320 p., port., maps. London, Student Christian Movement. ISIS

XVIIIth Century (second half)

A. — *Mathematics.*

Breidenbach, W. KANT und die negativen Zahlen. *Zeitschr. math. nat. Unterr.*, 55, 112-114, 1924. ISIS

Pearson, Karl. The brain of LAPLACE. *Nature*, 119, 560, April 16, 1927. ISIS

Smith, Edgar C. The tomb of LAPLACE. *Nature*, 119, 493-494, 1927. ISIS

B. — *Physical Sciences and Technology.*

Bacquié. Une verrerie au XVIII[e] siècle. *La Céramique et la Verrerie.*, 46e Année, 215-217, Paris, 1926. ISIS

L'auteur utilise un rapport d'inspecteur des manufactures daté de 1766 qu'il a recueilli dans les archives départementales de la Côte d'Or pour décrire l'installation et le travail de la verrerie de Rouelle, importante à l'époque car elle occupait plus de deux cents personnes, mais totalement disparue aujourd'hui. L. L.

Davis, Tenney L. The last stand of phlogiston : PRIESTLEY's defense of the doctrine after his removal to America. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 132-147, 1927. ISIS

Apropos of PRIESTLEY's Considerations on the doctrine of phlogiston (39 p., Philadelphia 1796), which was translated into French and controverted by ADET, ambassador of France to the United States (96 p., Philadelphia 1797). Though ADET's arguments were very forcibly put, PRIESTLEY remained unconvinced. He wrote other papers in the defense of phlogiston in 1797, 1800, 1802, 1803 ! The second edition with additions of the Doctrine of Phlogiston Established, bears the date of 1803 but contains a letter by JOSEPH PRIESTLEY, Jr., dated Febr. 29, 1804 and therefore appeared after the death of its author. Thus did PRIESTLEY continue his opposition to the new chemistry and refuse so-to-say to recognize his own child, until the very end of his life. The last writings of PRIESTLEY received no answers; for phlogiston was dead before him. G. S.

Dickinson, H. W. and **Jenkins, Rhys.** JAMES WATT and the steam engine. 102 plates, 42 illustrations in text, mostly from WATT's original drawings, 2 maps. Oxford, University Press, 1927. ISIS

Färber, Eduard. Wärmestoff und Sauerstoff. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 122-131, 1927. ISIS

Foster, Mary Louise. Life of LAVOISIER. ANTOINE-LAURENT LAVOISIER. His life and works. (Smith College Monographs, 1.) 72 p. Smith College, Northampton, Mass., 1926. ISIS

Study of LAVOISIER's life based upon the collected edition of his works and GRIMAUX's biography. This is, strange to say, the first detailed account to appear in English. The author is Professor of Chemistry at Smith College, Northampton, Mass. G. S.

Foster, William. Pioneering in the teaching of chemistry : Doctor

JOHN MACLEAN's lectures on combustion, delivered at Princeton near the close of the eighteenth century. *Princeton Alumni Weekly*, 27, 519-520, February 4, 1927. ISIS

MACLEAN's « Two lectures on combustion », etc., Philadelphia, 1797, played an important part in the controversy, which waxed in America between PRIESTLEY, WOODHOUSE, MITCHELL, and MACLEAN, over the almost entirely abandoned doctrine of phlogiston. T. L. D.

Hartmann, Ludwig. Der Physiker, Astronom, Geodät und Mitbegründer der bayerischen Landesvermessung, ULRICH SCHIEGG von Ottobeuren (1752-1810). Neue Beiträge zu seiner Lebensgeschichte. *Stud. und Mitt. zur Geschichte des Benediktiner-Ordens und seiner Zweige*, 44, 128-174, 1926. ISIS

Kistner, Adolf. Mannheimer Stadtrat und kurpfälzische Regierung gegen das alchemische Laborieren 1753. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 109-114, 1927. ISIS

Koppel, Ivan. Beitrag zur Entdeckungsgeschichte des Wolframs. *Chemiker-Ztg.* 50, 969-971, 1926. ISIS

Macfarlan, J. GEORGE DIXON : discoverer of gas light from coal. *Transactions of the Newcomen Society*, 5, 53-56, pl. XIII, London, 1926. ISIS

« For over a hundred years WILLIAM MURDOCK has generally been regarded as first inventor and practical founder of the industry of gas making in England. No doubt worth notice disturbed that belief until June, 1924, when Mr. WAYNMAN DIXON, J. P., Great Ayton, Yorkshire, in a letter to the *Times*, claimed the invention for his great-great-grandfather, GEORGE DIXON, of Cockfield, County Durham, whose experiments were made so long ago as circa 1760. Modest and retiring, DIXON did not advertise in his day, and since death his descendants have omitted until now to secure his right. The writer has investigated this claim, and has gleaned a few scraps of information about DIXON that are here set forth. »

Malone, Dumas. The public life of THOMAS COOPER, 1783-1839. XV + 432 p. (*Yale historical publications*, Miscellany, 16). New Haven, Yale University Press, 1926. ISIS

Reviewed by C. S. BOUCHER, *American Historical Review*, 32, 618-620, 1927. THOMAS COOPER (1759-1840), British American inventor, scientist, publicist. Friend of JAMES WATT and later of THOMAS JEFFERSON. G. S.

Mieli, Aldo. LAVOISIER. 75 p. 2da ediz. Roma, FORMIGGINI, 1926. (L. 5). ISIS

This neat little volume contains not only a biographical sektch, but also

a discussion of LAVOISIER's discoveries and their origin. Portrait and bibliography. On p. 20, l. 10, read THOMPSON (not Thomson).

Müller, Franz Joh. Der Benediktiner Pater JOHANNES BAPTIST ROPPELT auf Kloster Banz bei Bamberg. Der erste Kataster-Techniker Deutschlands. (1744 bis 1814). *Bayer. Zeitschr. f. Vermessungswesen*, 25, 268-278, 1926. ISIS

Russell, Phillips. BENJAMIN FRANKLIN. The first civilized American. XII + 332 p., many plates. New York, BRENTANO, 1926. ISIS

A new candid and well-written biography, very easy to read. The scientific part is very inferior to the rest; in fact it is truly insufficient. The illustrations are abundant but badly distributed. FRANKLIN was the youngest son of the youngest son for five generations. G. S.

Smith, Edgar F. JOSEPH PRIESTLEY. Priestley lecture given at the anniversary meeting of the American Chemical Society after the Priestley Medal had been conferred on Dr. EDGAR F. SMITH. *Science*, 64, 317-319, 1926. ISIS

Zaunick, Rudolph. Ein übersehener Brief SAMUEL HAHNEMANNS aus seiner Leipziger chemischen Arbeitsperiode. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 115-121, 1927. ISIS

Letter dated Stetteritz, July 10, 1791 to an unknown correspondent. G. S.

C. — *Natural Sciences.*

Bailey, E. B. JAMES HUTTON : father of modern geology, 1726-1797. Bicentenary address, delivered on Feb. 16 to the Edinburgh Geological Society. *Nature*, 119, 582, 1927. ISIS

Bather, Francis Arthur. Address delivered on July 10th, 1926, on WILLIAM SMITH, the Father of English Geology. 14 p., 3 pl. Bath, Published by the Royal Literary and Scientific Institution (on behalf of the Mayor and Corporation of Bath), 1926. ISIS

Address delivered by the President of the Geological Society after unveiling a memorial tablet to « Strata » Smith. The tablet reads as follows : « In this house, WILLIAM SMITH, the father of English geology, dictated « The order of the Strata » December 11th, 1799 ». A delightful address wherein the well known facts of SMITH's life are mixed with many interesting reflexions I must quote one of these « Again and again it must be hammered into the minds of geologists that two distinct sets of names are required : the one consisting of local names for local rocks, the other of universal names, not for rocks, but for periods of time. Thus is constructed a timescale against which the various local rocks can be placed. In Sussex, for example, we have

the Chalk-with-Flints ; but in Westphalia the rock of the same age is a yellowish marly sandstone, which it would be ridiculous to call Chalk. Both of these correspond to that time-period which is termed Senonian. » Reproduction of the portrait of WILLIAM SMITH painted in 1838 by HUGUES FOURAU (collection of the Geological Society). G. S.

Bellesort, André. La Pérouse. 126 p., 1 portr., 1 carte. (Collect. *Nobles vies, grandes œuvres*). Paris, PLON, 1926. ISIS

Récit très captivant de la vie de LA PÉROUSE (Albi, 1741, 08, 23 — île de Vanikoro, 1788 ?), dont la plus grande place est naturellement occupée par le grand voyage à travers le Pacifique où l'expédition devait finir à la fois si tragiquement et si mystérieusement. Le récit est d'autant plus intéressant que l'auteur a lui-même vu la plupart des pays dont il est amené à parler. Il est malheureusement gâté par un ultra-nationalisme hors de saison, et une animosité violente contre J. J. ROUSSEAU. L. G.

Beraldi, Henri. Le sommet des Pyrénées. Notes d'un Bibliophile. Vol. III, Du Mont-perdu au Néthou. 256 p. Paris, 1925. ISIS

This, like the two preceding volumes, deals primarily with the explorations and studies of LOUIS RAMOND (1755-1827) in the high Pyrenees (see *Isis*, 8, 494, 767). J. K. W.

Coutinho, Gago. Travessia da África pelo Dr. LACERDA E ALMEIDA. Mapa inédito existente na Biblioteca Nacional do Rio de Janeiro. *Boletim da agencia geral das colónias*. Ano 1, No. 3, p. 16-21, 1 sketch map, 1925; Ano 2, No. 15, p. 1-9, 1 sketch map; No. 16, p. 42-71; No. 17, p. 93-106; No. 18, p. 90-122, 1926; Ano 3, No. 19, p. 89-105; No. 20, p. 127-142, 1927. ISIS

The Portuguese astronomer and mathematician LACERDA E ALMEIDA journeyed from Quelimane to Cazembe in the upper Congo basin, where he died in 1798. Although his diary was published in Portuguese in 1844-1845 and by Captain (later Sir) RICHARD F. BURTON in English in 1873, only recently has a large MS map (in 23 sheets), showing the details of his route, come to light in Rio de Janeiro. A photographic reproduction of this map is to be published in the *Boletim da agencia geral das colónias*. The present continuing publication is a reprint of the Portuguese edition of 1844-1845, preceded by a brief introduction by Admiral COUTINHO. J. K. W.

Daudin, Henri. Etudes d'histoire des sciences naturelles. I. De LINNÉ à JUSSIEU. Méthodes de la classification et idée de série en botanique et en zoologie (1740-1790). 264 p. II. CUVIER et LAMARCK. Les classes zoologiques et l'idée de série animale (1790-1830). 2 vol. 460 + 338 p. Paris, ALCAN, 1926. ISIS

Reviewed by L. CUÉNOT, *Revue Générale des Sciences*, 38, 149, 1927.

Detole, P. Teodosio Somigli di S. L'Itinerarium del P. REMEDIO PRUTCKY, viaggiatore e missionario francescano (Alto Egitto) e il

suo viaggio in Abissinia, 21 febbraio, 1752- 22 aprile, 1753. Congrès International de Géographie, Le Caire, avril 1925, Compte rendu des travaux de la cinquième section, V., 157-195, 2 maps, 2 illus., 1926. ISIS

The unpublished Itinerarium of the Bohemian Father PRUTCKY, preserved in a MS. in Prague, gives an account of an important missionary journey in Abyssinia with « a veritable treatise on the Abyssinia of the eighteenth century: its historical, geographical, political, military, administrative, monetary, religious, ethnographic, meteorological, hydrographic, and pathological aspects, and on the flora and fauna ». The work is here summarized and discussed at length. J. K. W.

Hildebrand, J. R., The Columbus of the Pacific, Captain JAMES COOK. *National Geographic Magazine*, January 1927, 84-132. ISIS

Popular article with abundant illustrations, more or less to the point. G. S.

Jenks, William L. The « HUTCHINS » map of Michigan. *Michigan History Magazine*, 10, p. 358-373, 1926. ISIS

THOMAS HUTCHINS (1730-1789) drew in 1762 the best map of his period; in 1781 he was appointed « Geographer to the United States of America. » J. K. W.

Killermann, Sebastian. AUGUST JOH. CARL BATSCH (1761-1802). *Zeitschr. f. Pilzkunde*, 5, 285-289, 1925. ISIS

Killermann, Sebastian. HEINRICH JULIUS TODE (1733-1797). *Zeitschr. f. Pilzkunde*, 5, 269-271, 1925. ISIS

Meisel, Max. A bibliography of American natural history. The pioneer century, 1769-1865. The role played by the scientific societies; scientific journals; natural history museums and botanic gardens; state geological and natural history surveys; federal exploring expeditions in the rise and progress of American botany, geology, mineralogy, paleontology and zoology. Volume II. The institutions which have contributed to the rise and progress of American natural history, which were founded or organized between 1769 and 1844. XII + 741 p. Brooklyn, N. Y., The Premier Publishing Co., 1926. ISIS

The first volume of this bibliography, published in 1924, was reviewed in *Isis*, 7, 552, and the general plan and scope of the undertaking were then outlined. The present volume contains a series of articles devoted, in chronological order, to each of the early American societies and other institutions. For each of them, the author gives an historical outline, including lists of main officers; this is followed by a list of their publications and finally by a list of all papers on natural history. There is no index but I assume than at index will be included in vol. 3. It is interesting to reproduce the names of

the eleven earliest organizations, that is, those founded in the XVIIIth century: 1769, American Philosophical Society, Philadelphia; 1773, Charleston (S. C.) Museum; 1780, American Academy of Arts and Sciences, Boston; 1784, Peale's Philadelphia Museum; 1787, University of the State of New York, Annual Reports of the Board of Regents; 1791, Society for the Promotion of Agriculture, Arts and Manufactures, New York City; 1793, Harvard College Mineralogical Cabinet, Cambridge; 1797, Medical Repository, New York City; 1798, American Mineralogical Society, New York City; 1799, Connecticut Academy of Arts and Sciences, New Haven; East India Marine Society, Salem, Mass. The account of these eleven organizations covers 81 pages. This is an invaluable introduction to the history of American science. G. S.

Richet, Etienne. Voyage d'un cadet de Gascogne aux Isles du Vent et sous le Vent de l'Amérique (1767-1769). *Bulletin de la Societé Royale de Géographie d'Anvers*, 45, 175-243, 1925. ISIS

Extracts, with explanatory comments, from the journal of FLORIMOND BOUDON DE SAINT-AMANS, « un épicurien, ennemi des grands travaux et curieux cependant de toutes les choses de l'esprit, comme l'a jugé un peu sévèrement, mais non sans exactitude, un de ses compatriotes. » J. K. W.

Scoresby, William. Seven Log-books concerning the arctic voyages of Captain WILLIAM SCORESBY, Senior, of Whitby, England. Issued in facsimile by the Explorers Club of New York, with reproductions in color of portraits in oils of Captain WILLIAM SCORESBY, Senior and of Captain WILLIAM SCORESBY, Junior, D.D., 8 vols., 31 + 191 + 57 + 32 + 38 + 34 + 83 + 61 p., 3 pl. of portraits, 3 pl. of maps, 1 map in text, illus. New York, The Explorers Club, 1916-1917. ISIS

Facsimile reproductions of logbooks kept by WILLIAM SCORESBY (1760-1829) during fourteen whaling voyages in Greenland waters between 1786 and 1822. (Based on note by W. L. G. JOERG in XXXV^e *Bibliographie Géographique* 1925, No. 201) J. K. W.

Wickersheimer, Ernest. Catalogue des Folia naturales res spectantia a JOHANNE HERMANN collecta. *Revue des Bibliothèques*, 52 p., Paris, CHAMPION, 1925. ISIS

« JEAN HERMANN, né à Barr en 1738, après avoir conquis le bonnet de docteur à la Faculté de médecine, enseigna l'histoire naturelle à Strasbourg de 1764 jusqu'à sa mort .Grand amateur de curiosités, il amassa dans sa maison, aujourd'hui démolie, de la place Saint-Thomas, des collections variées que complétait une belle bibliothèque scientifique. Ces richesses ne furent pas dispersées. Les collections d'histoire naturelle constituèrent le noyau du Musée de sa ville adoptive et les livres ... forment actuellement l'un des fonds les plus précieux de la Bibliothèque universitaire et régionale de Strasbourg. C'est dans cet établissement, où il porte la côte R. 5, qu'est conservé le recueil dont voici le catalogue. » Ce recueil contient 249 pièces datant du XVI^e siècle à la fin du XVIII^e. Elles « se rapportent aux choses les plus diverses, animaux et végétaux extraordinaires, curiosités pathologiques, monstres réels

ou imaginaires, mouvements de l'écorce terrestre et apparitions dans le ciel; on y trouve aussi des annonces de guérisseurs, de saltimbanques et de sorciers. Si inégales que soient la valeur et la rareté de ces pièces, elles offrent dans leur ensemble de l'intérêt pour l'histoire des sciences et aussi pour celle des dérèglements de l'imagination; cet intérêt est encore accru par les notes que HERMANN a ajoutées aux marges. G. S.

Willnau, Carl (i. e. NAUMANN, CARL W.). (MARTIN FROBENIUS) LEDERMÜLLER (1719-1769). Erzählung. 79 S. Leipzig, K. SCHOLTZE, Nachf., 1921. ISIS

Willnau, Carl (i. e. NAUMANN, CARL W.). (MARTIN FROBENIUS) LEDERMÜLLER (1719-1769) und (WILH. FRIEDRICH) VON GLEICHEN-RUSSWORM (1717-1783). Zwei deutsche Mikroskopisten der Zopfzeit. 24 S. Leipzig, K. SCHOLTZE, Nachf., 1926. ISIS

Zaunick, Rudolph. Die im Jahre 1783 an das Kurfürstliche Naturalien-Kabinet eingelieferten sächsischen Vögel. Erster Beitrag zu einer Geschichte des Museums für Tierkunde zu Dresden. *Sitzungsber. und Abh. der Naturwiss. Ges. Isis in Dresden*, S. 1-17, 1924. ISIS

D. — *Medical Sciences.*

Baumann, E. D. Bijdragen tot de geschiedenis van de dysenterie in de achttiende eeuw. *Bijdragen tot de gesch. der genees.*, 6, 257-271, 1926. ISIS

Mainly apropos of GEORGE CLEGHORN (1716-89) : Observation on the epidemical diseases in Minorca, 1751 ; and Sir JOHN PRINGLE (1707-82) : Observation on the diseases of the army (London, 1752). G. S.

Bedarida, Henri. La « Gazzetta medica » di Parma. (1760). Contributo alla storia della medicina nel secolo XVIII. *Archivio Storico per le Province Parmensi*, 25, 179-222, Parma, 1925. ISIS

Darmstaedter, L. Ein Brief von EDWARD JENNER vom 12. VIII. 1805. Als Beitrag zur Geschichte der Kuhpockenimpfung. *D. med. Wochenschr.*, 32, S. 1350, 1926. ISIS

Fleur, E. JEAN-BAPTISTE THIRION apothicaire à Metz, *Bull. Soc. Hist. Pharm.* No. 47, p. 81-88; No. 48 p. 129-143, Paris, 1925. ISIS

Grâce à des documents recueillis aux archives municipales de Metz l'auteur a pu constituer la biographie complète du célèbre et audacieux apothicaire. J. B. THIRION, allemand luxembourgeois, fait ses débuts à la Société royale des sciences où son talent d'expérimentateur est reconnu malgré les chicanes de tous les savants messins. Il crée ensuite un cours qui périclite faute d'auditeurs; mais dans son laboratoire, PILÂTRE DE ROZIER, le futur aéronaute prend

le goût de la physique et de la chimie, un jeune officier, DÉODAT DOLOMIEU, bientot célèbre comme géologue, se livre à des recherches en même temps qu'à une douce idylle avec la plus jeune enfant de son instructeur, le duc DE LA ROCHEFOUCAULD lui-même s'intéresse aux travaux du maître apothicaire, et l'accompagne dans ses herborisations. Plusieurs fois THIRION essaie de relever son cours. Mauvais professeur, il échoue et c'est seulement en 1778 que MICHEL DE TENNETAR en lui succédant parvient à créer un enseignement normal et régulier de la chimie. Toujours en s'appuyant sur des documents dont il donne d'ailleurs le texte à la fin de son travail, l'historien montre enfin un THIRION homme d'affaires que les scrupules ne retiennent pas toujours. C'est ainsi que, manquant d'argent, il intéresse aux travaux de sa pharmacie J. B. BURTHE, puis l'abandonne dès qu'il en a reçu une caution importante. Un procès est engagé dont on peut suivre toutes les pérépéties au moyen des pièces authentiques citées par l'auteur. THIRION est condamné. En 1782, il réintègre son officine et ses fourneaux pour y rester jusqu'à sa mort en 1829. Travail de grande valeur qui, au point de vue de l'histoire locale mérite une attention spéciale. L. L.

Heberden, William (1710-1801). Mitteilungen über Angina pectoris (1768). Ins Deutsche übertragen von E. WALLACH. *Archiv fur Geschichte der Medizin*, 19, 1-8, 1917. ISIS

Middleton, William Shainline. JOHN MORGAN (1735-1789) father of medical education in North America. *Annals of Medical History*, 9, 13-26, 1927. ISIS

Middleton, William Shainline. JOHN REDMAN. *Annals of Medical History*, 8, 213-223, 1926. ISIS

Philadelphia physician, born in Philadelphia in 1722, died there in 1808.

Packard, Francis R. The centenary of the death of PHILIPPE PINEL (1745-1826). *Annals of Medical History*, 9, 103-104, 1027. ISIS

Sabrazès, J. TH. TRONCHIN, médecin de VOLTAIRE. A propos d'une ordonnance. *Aesculape*, mai 1926, 121-127. ISIS

THÉODORE TRONCHIN (Genève 1709, id., 1781), professeur de médecine à Genève, puis médecin à Paris, apparaît comme un précurseur en matière de psychothérapie et de naturisme. Il fut le médecin de VOLTAIRE dès l'arrivée de celui-ci à Genève. L. G.

Sueiro, M. B. Barbosa. MANUEL CONSTÂNCIO (1726-1817), a sua vida e a sua obra. *Arquivo de Anatomia e Antropologia*, 9, 741-771, 1925-26. ISIS

(**Weikard, Melchior Adam.**) Autobiography. A picture of 18th century medicine in Germany. Edited and translated by WILLIAM FERDINAND PETERSEN. *Medical Life*, 34, 53-82, 5 pl., 1927. ISIS

The original German text of this autobiography appeared in Berlin and Stettin in 1784. WEIKARD, born in 1742, received his medical education in Würzburg; he became physician to the Russian Empress. G. S.

E. — *Alia.*

Baldensperger, Ferdinand. Le mouvement des idées dans l'émigration française (1789-1815). 2 vol. Paris, PLON-NOURRIT, 1924. ISIS

Black, John Bennett. The art of history : a study of four great historians of the eighteenth century. London, METHUEN, 1926. ISIS

Studies on VOLTAIRE, GIBBON, ROBERTSON and HUME.

Buer, M. C. Health, wealth and population in the early days of the industrial revolution. XL + 290 p. London, ROUTLEDGE, 1926. ISIS

Reviewed in *Nature*, 119, 379-381, 1927.

Busnell, Manlio D. DIDEROT et l'Italie. Reflets de vie et de culture italiennes dans la pensée de DIDEROT. Avec des documents inédits et un essai bibliographique sur la fortune du grand encyclopédiste en Italie. Paris, CHAMPION, 1925. ISIS

Chase, Cleveland B. The young VOLTAIRE. IX + 253 p. New York, LONGMANS, GREEN, 1926. ISIS

Reviewed by CARL BECKER, *American Historical Review*, 32, 645-647, 1927.

Rolleston, J. D. VOLTAIRE and medicine. *Proc. Roy. Soc. Med.*, 19, Sec. hist. Med., 17-28, 79-84, 1926. ISIS

ROLLESTON gives an account of VOLTAIRE's relations with individual doctors and the medical profession as a whole, including some account of his own medical history and his relations with medicine. H. R. V.

Sée, Henri. La valeur historique des « Voyages en France » d'ARTHUR YOUNG. Mélanges HENRI PIRENNE, vol. 2, 449-459, Bruxelles, 1926. ISIS

Smith, Edgar Fahs. WILLIAM SMITH, D. D. (1727-1803), first Provost of the University of Pennsylvania. 30 p. *The General Magazine and Historical Chronicle, University of Pennsylvania*, January 1927. ISIS

A spirited biography of the first Provost by the late Provost, his namesake, Many illustrations. G. S.

Variot, G. La doctrine de J.-J. ROUSSEAU en puériculture et les opinions des médecins de son temps. *Bull. de la Soc. fr. d'hist. de la Méd.*, 20, 339-349, 1926. ISIS

Vuillaud, Paul. JOSEPH DE MAISTRE franc-maçon; suivi de pièces inédites. 260 p. Paris, EMILE NOURY, 1926. ISIS

L'activité maçonnique du fougueux défenseur du dogme de l'infaillibilité du pape s'étend de 1774 jusqu'aux environs de 89; J. DE MAISTRE devient plus tard un ennemi de la franc-maçonnerie. L'auteur explique les idées prophétiques que l'on trouve dans les Soirées de Saint Pétersbourg, et dans le traité du Pape par l'influence de son initiation aux doctrines théurgiques de PASQUALIS MARTINEZ (1715 ?-1779), doctrines qui n'ont jamais été publiées, et qui semblent dérivées de la cabbale. L. G.

Webb, Clement Charles Julien. KANT'S philosophy of religion. Oxford, Clarendon Press, 1926. ISIS

XIXth Century (whole and first half)

A. — *Mathematics.*

Courant, R. BERNHARD RIEMANN und die Mathematik der letzten hundert Jahre. *Die Naturwissenschaften*, 814-818, 1265-1277, 1926. ISIS

B. — *Physical Sciences and Technology.*

Bone, William A. The centenary of the friction match. *Nature*, 119, 495-496, April 2, 1927. ISIS

« Exactly a hundred years ago next Thursday, JOHN WALKER (1781-1857), pharmacist of Stockton-on-Tees, recorded in his Day-Book the first credit sale of his newly-invented ' Friction Lights ', which were indisputably the first practical and useful friction matches. This historic record was as follows :

« Die Saturni Apr. 7th 1827.

No. 30

Mr. Hixon

Sulphurata Hyperoxygenata Frict. 100

Tin Case 2d. 1.2. »

Brauer, Kurt. GOETHES Briefwechsel mit WACKENRODER. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 159-175, 1927. ISIS

HEINRICH WACKENRODER, born near Hanover in 1798, became professor in Jena in 1828 and founded there the pharmaceutical institute. He wrote a treatise on chemical analysis, a treatise on beer and sketches of the history of alchemy (Hannover 1839). G. S.

Brunel, Marc Isambard (1769-1849). Letters. Annotated by RHYS JENKINS. *Transactions of the Newcomen Society*, 5, 91-96, London, 1926. ISIS

« A collection of ten holograph letters written in French, by the elder BRUNEL to the Duke DE LA ROCHEFOUCAULD in Paris, was presented in 1924

to the Institution of Mechanical Engineers by Mr. S. E. ALLEY... The letters range in date from November 1814, to May, 1817 ». They deal with a steam engine and boiler and with BRUNEL's work at shoe-making by machinery (English patent 1810). G. S.

Bugge, Günther. Über die Anfänge der deutschen Zementfabrikation. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 187-194, 1927. ISIS

Coward, H. F. JOHN DALTON (1766-1844). The early years of the atomic theory as illustrated by DALTON's own note-books and lecture diagrams. His apparatus. *Journal of Chemical Education*, 4, 23-37, 1927. ISIS

From a study of DALTON's lecture diagrams, discovered about twelve years ago in a cupboard in the old house of the Manchester Literary and Philosophical Society (cf. GEE, COWARD, and HARDEN, *Mem. Manchester Lit. Phil. Soc.*, 59, Mem. 12. 1914-1915), COWARD concludes that « the atomic theory was envisaged by DALTON as an exposition of invisible realities, not merely as a convenient conception of possibilities, and that his attitude led him to make inferences which would surely have been missed if the theory had not been to him a picture of definite physical fact. » Illustrations; lecture diagrams, apparatus. T. L. D.

Desvergnes, Louis. Examen d'une poudre à canon du premier empire. *Ann. de chimie anal.*, 6, 134-135, 1926. ISIS

A cette époque, beaucoup de soldats, originaires des campagnes, emportaient lors de leur libération une certaine quantité de poudre à canon : la poudre à canon entrait, avec de la suie et de la graisse, dans la composition d'un remède populaire destiné à guérir la météorisation des ruminants. Des analyses faites par l'auteur, il résulte que cette poudre était constituée ainsi : p. 100, salpètre, 72, 5, charbon, 13,11 et soufre, 11, 60. Le salpètre et le soufre employés étaient très purs : il y a dans cette pureté un fait remarquable pour l'époque. L. L.

Diergart, Paul. Zur Stellung von KARL GUSTAV BISCHOF (Bonn) in der Chemie des 19. Jahrhunderts. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 195-203, 1927. ISIS

KARL GUSTAV BISCHOF (1792-1870), first professor of chemistry in the University of Bonn from 1819 on. His main work was done in the field of chemical and physical geology. G. S.

Donders, Frans Cornelis (1818-89). Blik op de stofwisseling van het epitellurische leven als bron der eigene warmte van planten en dieren. Eene voorlezing uitgesproken in het Natuurkundig Gezelschap te Utrecht. Utrecht, Bij C. v. D. POST Jr. 1845. Reprinted with English translation in the *Opuscula selecta Neerlandicorum de*

arte medica, fasciculus quintus, 276-381, Amsterdam, 1926. ISIS

This lecture of the great Dutch physiologist and ophthalmologist is of particular interest for the study of the history of the first principle of thermodynamics. It is another witness of the fermentation of ideas relative to this principle which was taking place about the years 1840-45. I quote the final paragraphs : « To trace the chemical process in each element, to trace the connection between the forces thus liberated and the peculiar metabolic process, that, gentlemen, is the lofty aim of him who sees in life more than the expression of a mysterious force. This field is wide and extensive and has barely been touched; but the germs of the first seeds which our time has sown on this field are already very promising for the future. And when through untiring efforts to gain the end, of which we have a clear conception, the germinating seeds grow into plants, blossom forth and bear fruit, a new light will have ascended for us and we shall be able to observe the actions of the living organism as though it were the contents of a chemist's retort. » On DONDERS see *Isis* 4, 420, 601; 5, 241. G. S.

(Fraunhofer, Joseph). Dem Andenken an JOSEPH FRAUNHOFER zur Jahrhundertfeier seines Todestages. *Die Naturwissenschaften*, 521-554, 4. Juni 1926. ISIS

Whole number devoted to FRAUNHOFER, with portrait. Contents : H. BOEGEHOLD, Die Lehre von der Beugung bis zu FRESNEL und FRAUNHOFER; FR. MEYER, FRAUNHOFER als Mechaniker und Konstrukteur; M. VON ROHR, JOSEPH FRAUNHOFER als der Schöpfer der deutschen Feinoptik; M. VON ROHR, FRAUNHOFERS Forschungen zur Glasbeschaffenheit und Farbenhebung sowie seine Leitung der Glashütte zu Benediktbeurn.

Gutbier, Alexander. GOETHE, Grossherzog CARL AUGUST und die Chemie in Jena. Mit einem neu aufgefundenen Brief DÖBEREINERS an GOETHE. (*Jenaer akademische Reden*, Heft 2). VI + 66 S., mit 3 Tafeln und 30 Anlagen. Jena, FISCHER, 1926, ISIS

Reviewed by JULIUS SCHIFF, *Die Naturwissenschaften*, Heft 43, 962-963, 1926.

Guthrie, Samuel (1782-1848). GUTHRIE number of *Medical Life*, Vol. 34, Number 3, 101-152, 1927. ISIS

Whole number devoted to the Scotch-American chemist SAMUEL GUTHRIE, discoverer of chloroform. It contains a biography by VICTOR ROBINSON with abundant illustrations and a reprint of GUTHRIE's papers first published in the *American Journal of Science* 1831-32. G. S.

Hoppe, Edmund. Die ersten Polarisationsapparate. *Die Naturwissenschaften*, 14, 511-512, 1926. ISIS

Keller-Zschokke, Joh. Val. Eine schweizerische Schmelzhütte fur optisches Glas in Solothurn 1831-1837 und THEODOR DAGUET, Fabrikant optischer Gläser 1795-1870. 126 S., 5 Taf. Solothurn, VÖGT-SCHILD, 1926. ISIS

Lacroix, Alfred. Notice historique sur JEAN-BAPTISTE BOUSSINGAULT (1802-1887), membre de la Section d'Economie rurale. Lecture faite dans la séance publique annuelle du 13 décembre 1926. 56 p. Paris, Académie des Sciences, 1926. ISIS

La vie de BOUSSINGAULT, créateur de la chimie agricole, fut très romantique. Né à Paris en 1802, élève de Louis-le-Grand et de l'École des mineurs de Saint-Étienne, il fut appelé en Colombie par BOLIVAR. HUMBOLDT l'encouragea et l'aida. BOUSSINGAULT passa dix années dans l'Amérique du Sud (1821-1830), exerçant tour à tour le métier de géodésien, de naturaliste et de soldat. Il nous a donné de son séjour là-bas un récit attachant dans les quatre derniers volumes de ses mémoires. LACROIX résume les travaux scientifiques auxquels ce séjour a donné lieu : topographie, géologie, météorologie, minéralogie, analyse chimique de végétaux. Signalons notamment ses travaux sur l'oro blanco (platine) du Chocó. Après un bref passage à Lyon, il fut nommé suppléant de DUMAS à la Sorbonne en 1836-37. Les années 1836-39 furent parmi les plus fécondes de sa vie; c'est alors que son œuvre agronomique fut fondée. En 1849 il fut nommé professeur au Conservatoire des Arts et Métiers, et désormais sa vie se passa plus calmement l'hiver, à Paris, l'été dans sa terre d'Alsace où il faisait des expériences fondamentales. Il mourut à Paris en 1887. Il n'est pas possible de résumer ici ses travaux de chimie agricole et d'économie rurale. Cette biographie, dont je n'ai fait qu'indiquer quelques traits saillants, est à la fois très attachante et très instructive. G. S.

Liebig, Justus von. Eigne biographische Aufzeichnungen. Eingeleitet und hrg. von KARL ESSELBORN. 32 S. Giessen, Liebig-Museum, 1926. ISIS

Lippmann, Edmund O. von. Ersatz des westindischen Zuckers durch ostindischen. (Vor hundert Jahren, VI) *Die Deutsche Zuckerindustrie*, Jahrg. 1927, Nr. 1, 1 S. ISIS

Lockemann, Georg. Der chemische Unterricht an den deutschen Universitäten im ersten Viertel des neunzehnten Jahrhunderts. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 148-158, 1927. ISIS

Müller, Franz Joh. Zur Geschichte des metrischen Längenmasses. *Bayer. Zeitschr. f. Vermessungswesen*, 25, 153-171, 182-194, 251-254, 1926. ISIS

Newell, Lyman C. FARADAY's discovery of benzene. *Journal of Chemical Education*, 3, 1248-1253, 1926. ISIS

An account of FARADAY's paper before the Royal Society, June 16, 1825, with a recalculation of his results in accord with modern theory. T. L. D.

Parsons, William. The scientific papers of WILLIAM PARSONS, Third

Earl of Rosse, 1800-1867. Collected and republished by the Hon. Sir CHARLES PARSONS. v + 221 p., 18 pl. Newcastle-upon-Tyne, Sir HOWARD GRUBB, PARSONS and Co., 1926. ISIS

Peachey, George C. Sir HUMPHRY DAVY : a sketch. *Annals of Medical History*, 9, 12, 1927. ISIS

Biographical note extracted from the commonplace book of Mrs. MATTHEW BAILLIE, the widow of the famous physician. G. S.

(Photography). Centenaire de l'invention de la photographie. Compte-rendu rédigé par les soins de la Société française de Photographie. 108 p. Paris, GAUTHIER-VILLARS, 1926. ISIS

Robinson, Victor. SAMUEL GUTHRIE (1782-1848). *Medical Life*, 34, 103-152, 1927. ISIS

An entertaining article on « one of the most interesting characters in the early annals of American science, the backwoods chemist who gave to mankind the boon of chloroform », with portraits of certain members of his family (none of the chemist himself is known), pictures of his birthplace at Brimfield, Massachusetts, and his home at Sackett's Harbor, New York, etc., and with a reprint of his complete chemical writings from the *American Journal of Science and Arts for* 1831-1832.

GUTHRIE discovered chloroform independently of SOUBEIRAN and of LIEBIG, and apparently earlier than either. He prepared it by distilling alcohol with chlorinated lime, isolated it in a state of purity, and described its properties. He also worked with potassium chlorate, mercury and other fulminates, gunpowder and primer compositions, with molasses from potatoes, and on the purification of oil of turpentine. He made the important observation that mercury fulminate serves better for the igniting of gunpowder if it has previously been mixed with a third of its weight of oxide of tin. T. L. D.

Seitz, A. JOSEPH FRAUNHOFER und sein optisches Institut. IV + 118 S. 6 Taf. Berlin, SPRINGER, 1926. ISIS

Reviewed by H. BOEGEHOLD, *Die Naturwissenschaften*, 340-341, 1927.

Sheppard, S. E. The chemistry of photography. I. Historical considerations. *Journal of Chemical Education*, 4, 298-312, 1927. ISIS

Smith, Edgar F. JAMES BLYTHE ROGERS, 1802-1852; chemist. 14 p., portrait. Philadelphia, University of Pennsylvania, 1927. ISIS

Dr. PATRICK K. ROGERS, professor of chemistry in William and Mary College, had four sons : WILLIAM B., founder of the Massachusetts Institute of Technology; HENRY D., geologist; ROBERT E. and JAMES B., chemists. The last named who was the eldest and is the least known, is the subject of this sketch. JAMES became eventually professor of chemistry in the Franklin Institute, Philadelphia. « In conjunction with his brother ROBERT (1846) he compiled a volume on inorganic and organic chemistry (based on the

works of EDWARD TURNER), which was used as a text-book. This is only one instance where these two brothers acted as colaborers. WILLIAM and HENRY were joint authors of eight and ROBERT and WILLIAM of nineteen papers. » G. S.

Söderbaum, Hendrik Gustav. BERZELIUS und HWASSER, ein Blatt aus der Geschichte der schwedischen Naturforschung. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 176-186, 1927. ISIS

ISRAËL HWASSER (1790-1860), professor of medicine in Upsala, was the Swedish protagonist of the « philosophy of nature » which was represented in Germany by SCHELLING and OKEN, in Denmark by OERSTED, etc. G. S.

C. — *Natural Sciences.*

Audubon, John James (1785-1851). Delineations of American scenery and character. With an introduction by FRANCIS HOBART HERRICK. New York, BAKER, 1926. ISIS

Huc, Evariste (1813-1860). Souvenirs d'un voyage dans la Tartarie et le Thibet pendant les années 1844, 1845 et 1846. Nouvelle édition, annotée et illustrée par J. M. PLANCHET. 2 vol., 426 et 493 pages. Péking, Imprimerie des Lazaristes, 1924. ISIS

Elaborate review by P. PELLIOT, *T'oung Pao*, vol. 24, 133-178, 1926.

Huc, Evariste (1813-1860). Souvenirs d'un voyage dans la Tartarie, le Thibet, et la Chine. New edition, with preface, by H. D'ARDENNE DE TIZAC. Vol. I. Dans la Tartarie. XIII + 301 p., map, portrait. Paris, PLON-NOURRIT, 1925. ISIS

Abridgement of the first part of Father RÉGIS-EVARISTE HUC's narrative of the famous journey through Mongolia (Tartary), China, and Tibet which he undertook in 1844-1846, in company with Father JOSEPH GABET. A second volume will complete the story. J. K. W.

Lockerby, William (1782-1853). The Journal of WILLIAM LOCKERBY, sandalwood trader in the Fijian Islands during the years 1808-1809 ; edited by Sir EVERARD IM THURN and LEONARD C. WHARTON with an introduction and other papers connected with the earliest European visitors to the Islands. CXI + 250 p., 3 plates, 5 sketch maps and charts. The Hakluyt Society, Second Series, No. 52. London, 1925. ISIS

Magoffin, Susan Shelby (1827-1855). Down the Santa-Fé trail and into Mexico : the diary of SUSAN SHELBY MAGOFFIN, 1846-1847.

Edited by STELLA M. DRUMM. XXV + 294 p. New Haven, Yale University Press, 1926. ISIS

Morris, Ralph C. The notion of a great American desert east of the Rockies. *The Mississipi Valley Historical Review*, 13, 190-200, 1926. ISIS

Among persistent geographical misconceptions in the same category as that of the Austral continent or of the Straits of Anian at an earlier period, was the idea that prevailed during the nineteenth century — even as late as 1870 — that the country between the Missouri River and the Rocky Mountains is a great desert. This is reflected in contemporary maps and accounts of the region and is based on reports of travellers, notably LEWIS and CLARK, ZEBULON PIKE, STEPHEN H. LONG, and others. This article traces the development of the belief as it finds expression in books and other documents, and its final disappearance with the advance of the frontier into the supposed desert. The writer does not attempt to explain the geographical reasons for the growth of this misconception. See also FLOYD C. SHOEMAKER, « Traditions concerning the Missouri Question », *The Missouri Historical Review*, Jan. 1922, p. 253-262. J. K. W.

Müller. Martin. Über die philosophischen Anschauungen des Naturforschers JOHANNES MÜLLER. *Archiv für Geschichte der Med.*, 18, 328-350, 1926. ISIS

Newell, Lyman C. ROBERT BROWN and the discovery of the Brownian movement. *Industrial and Engineering Chemistry*, 15, 7 p., 1923. ISIS

Pradel de Lamase, Martial de. Un compagnon de DUMONT D'URVILLE Le Commandant DE ROQUEMAUREL. *Ministère de l'Instruction publique, Bull. Section de Géographie*, 38, p. 77-90, 1923. ISIS

Sánchez, Antonio López. La geografía y los geógrafos españoles en el primer tercio del siglo XIX. *Boletin de la Real Sociedad Geográfica*, 66, p. 153-169, 1926. ISIS

A biographical note on the work of the cartographer TOMAS LOPEZ (1731-1802), of his sons JUAN and TOMÁS MAURICIO LOPEZ, and of the teacher and profoundly learned geographical scholar ISIDORO DE ANTILLON y MARZO (1778-1814). JUAN and TOMÁS MAURICIO LOPEZ were instrumental in the founding of the Geographical Cabinet, an important collection of maps and books which was ultimately absorbed in the Biblioteca Nacional. J.K.W.

Troxler, Ignaz Paul Vital (1780-1866). Über das Leben und sein Problem. Nach der Erstausgabe von 1806 mit einer Einführung und einem Nachwort hrg. von HANS KERN und CHRISTOPH BERNOULLI. 73 S. Celle, NIELS KAMPMANN, 1925. ISIS

Reviewed by R. ZAUNICK, *Mitt. zur Gesch. der Med.*, 26, 124, 1927.

Wheeler, Olin D. The trail of LEWIS and CLARK, 1804-1904; a story of the great exploration across the continent in 1804-1806. With a description of the old trail, based upon actual travel over it, and of the changes found a century later. New edition, with an introduction by FREDERICK S. DELLENBOUGH. In two volumes. Vol. I, XXIV + 377 p.; Vol. II. XV + 419 p. New York, PUTNAM, 1927. ISIS

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E. — *Alia.*

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Champollion (le Jeune), **Jean François** (1790-1832). Lettre à M. DACIER... relative à l'alphabet des hiéroglyphes phonétiques employés par les Egyptiens pour inscrire sur leurs monuments les titres, les noms et les surnoms des souverains grecs et romains. Paris, 1822, FIRMIN-DIDOT, 52 p., 4 planches; édition du centenaire avec préface de HENRI SOTTAS, 84 + 52 p., 4 pl. Paris, GEUTHNER, 1922. ISIS

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L. G.

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XIXth Century (second half)

A. — *Mathematics.*

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Greenhill, Sir **George** (1847-1927). Obituary by P. A. M. in *Nature*, 119, 323-325, 1927. ISIS

Kiepert, Ludwig. Persönliche Erinnerungen an KARL WEIERSTRASS. *Jahresber. Deutsch. Math.-Ver.*, 35, 56-65, 1926. ISIS

Locke, L. Leland. The first direct-multiplication machine. *Typewriter Topics, The International Office Equipment Magazine*, November 1926. ISIS

The first direct-multiplication machine was invented and constructed by RAMON VEREA, a Spanish resident of New York and patented on Sept. 10, 1878. This machine is described and discussed. For other studies of the author on calculating machines see, *Isis*, 7, 590. G. S.

Loria, Gino. Durante quarant' anni di insegnamento, confessioni e ricordi. *Bollettino di Matematica.* (Sezione storico-bibliografica) p. LXV - LXXVII. Bologna, 1926. ISIS

Miller, George Abram. Biographical note relating to J. J. SYLVESTER. *Science*, 64, 576-577, 1926. ISIS

Runge, Carl (1856-1927). Number 10 of *Die Naturwissenschaften* 1927 (p. 225-248) with portrait, entirely devoted to him. ISIS

Contents : L. PRANDTL. CARL RUNGE; R. COURANT. CARL RUNGE als Mathematiker; F. PASCHEN. CARL RUNGE als Spektroskopiker; H. GIESELER. Ueber die Aufstellung eines grossen Rowlandschen Konkavgitters nach der Methode von RUNGE und PASCHEN; J. FRANCK. Ueber eine Rotverschiebung der Resonanzfluorescenz durch vielfach wiederholte Streuung; M. BORN. Quantenmechanik und Statistik; H. KIENLE. Die Gestalt der kugelförmigen Sternhaufen. G. S.

Runge, Carl (1856-1927). Obituary in *Nature*, 119, 533, 1927. ISIS

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« BEDRICH (FRÉDÉRIC) PROCHAZKA est un des plus vieux mathématiciens tchèques; il est né le 4 juillet 1855 à Rakovnik en Bohème. » Portrait.

Vetter, Quido. Profesor Dr. VÁCLAV LÁSKA šedesátníkem. (Rozšířený proslov přednesený na schuzi Jednoty čsl. matematiku a fysiku v. Praze, dne 4. listopadu 1922). 20 p. Casopis pro pestovani matematiky a fysiky. Ročnik LIII, (1922?) ISIS

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B. — *Physical sciences and Technology.*

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Baglioni, Silvestro. L'opera di STANISLAO CANNIZZARO nella fisiologia e nella medicina : *Arch. di storia d. scienza*, 7, 67-79, 1926. ISIS

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Brownlie, David. Notes on a neglected worthy, JOHN PATISON of Airdrie. *Transactions of the Newcomen Society*, vol. 5, 45-52, pl. XI to XII, London, 1926. ISIS

JOHN JAMES PATISON, born at Leith in 1828, died at Inverkeithing, Fifeshire, in 1905. His « main achievements are the production of what is apparently the first practical internal screw conveyor horizontal carbonisation retort, and his work in the evolution of the shale oil industry. » Portrait.

Bryan, George S. EDISON : the man and his work. London, KNOPF, 1926. ISIS

(Capezzuoli, Serafino, 1813, 12, 10-1888, 03, 07). Commemorazione di S. C. Discorsi del Pr. L. LEONCINI, del Pr. C. CAPEZZUOLI; bibliografia, etc. *Riv. di storia d. sc. med. e natur.*, 17, 74-106, portr., 1926. ISIS

Professeur de chimie pathologique à Florence, SERAFINO CAPEZZUOLI s'est intéressé surtout à la pathologie du diabète. On lui doit un Trattato di chimica organica, en trois vol., 1855-1870. L. G.

(Cavendish Laboratory). Supplement to *Nature*, No. 2981, Dec. 18, 1926, p. 41-62, 12 fig., dedicated to the history of the Laboratory apropos of the seventieth birthday of Sir JOSEPH THOMSON. ISIS

Contents : Retrospect by Sir J. J. THOMSON; JAMES CLERK MAXWELL by Sir JOSEPH LARMOR; LORD RAYLEIGH by Sir ARTHUR SCHUSTER; Sir J. J. THOMSON by Sir OLIVER LODGE ; Sir ERNEST RUTHERFORD, by NIELS BOHR; The Cavendish Loabratory : 1876-1900, by Sir RICHARD GLAZEBROOK; Research work in the Cavendish Laboratory in 1900-1918, by J. A. CROWTHER. More articles will be found in the number of *Nature*, of which this supplement forms a part, notably one by Sir NAPIER SHAW on the Cavendish Laboratory as a factor in a counter revolution. G. S.

Cohen, Ernest. The semi-centenary of WILLARD GIBBS' phase law (1876-1926). *Science*, 64, 621, 1926. ISIS

(**Dewar**, Sir **James**, 1842-1923). Collected papers of Sir JAMES DEWAR, Fellow of Peterhouse and Jacksonian Professor of Natural Philosophy in the University of Cambridge, 1875-1923, Fullerian Professor of Chemistry in the Royal Institution of Great Britian, 1877-1923. With two supplementary papers not heretofore published, and an appendix and indexes. 2 vols. Vol. 1., XXII + 674 p.; vol. 2, IX, 675-1489. Edited by Lady DEWAR, with the assistance of J. D. HAMILTON DICKSON, H. MUNRO ROSS and E. C. SCOTT DICKSON. Cambridge, University Press, 1927. ISIS

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Lodge, Sir **Oliver.** The history and development of the telephone. *Jour. Inst. of Elect. Engin.*, 64, p. 1098, London, 1926. ISIS

Reviewed *in Nature*, 119, 244-245, 1927.

(**Mangin, A; Tschikolew, W.**) Drei grundlegende und gemeinverständliche Arbeiten zur Scheinwerferfrage, übersetzt von A. SONNEFELD. XII + 133 S., 48 Abb. u. Tafeln. *Ostwald's Klassiker d. exakten Wissensch.*, No. 219. Akad. Verlaggesellschaft, Leipzig, 1927. ISIS

Les travaux ici traduit par A. SONNEFELD sont : un mémoire de MANGIN sur « le système de télégraphie optique de la défense de Paris » (*Mémorial de l'officier du génie*, N° 23, Paris, 1874), une « Étude de divers dispositifs destinés à projeter la lumière électrique sur les objets éloignés », du même auteur (*id*, N° 25, 1876) — il y décrit son « réflecteur aplanétique » — et un court travail de TSCHIKOLEW sur l'examen des projecteurs électriques au moyen de la photographie, (en russe, in *Artillerie journal Fucschtaskaja*, St Pétersbourg, 1892), tous trois travaux importants pour l'histoire du problème des réflecteurs paraboliques. — ALPHONSE FRANÇOIS EUGÈNE MANGIN, officier du génie, est bien né le 14 juin 1825, comme l'indique le traducteur, mais à Mirecourt, et non à Miremont; mort à Paris en nov. 1885. — SONNEFELD n'a pu obtenir aucun renseignement biographique sur W. TSCHIKOLEW; je n'en possède non plus aucun, mais j'en recevrais volontiers. L. G.

Maxwell, J. Clerk. A dynamical theory of the electromagnetic field. Reprinted from the *Proceedings of the Royal Society*, vol. 13, p. 531, Dec. 8, 1864. *Nature*, 119, 125-127, 1927. ISIS

Mieli, Aldo. STANISLAO CANNIZZARO storico della scienza. *Arch. di storia d. scienza*, 7, 80-86, 1926. ISIS

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Oesper, Ralph E. ROBERT WILHELM BUNSEN. *Journal of Chemical Education*, 4, 431-439, 1927. ISIS

Olsen, J. C. Historical aspects of analytical chemistry in the United States for the last fifty years. *Journal of Chemical Education*, 4, 506-511, 1927. ISIS

(**Priestley, Joseph**). The *Journal of Chemical Education* for February 1927, PRIESTLEY Number, contains considerable material on JOSEPH PRIESTLEY in America, a bibliography of his chemical writings published in America, pictures of his house at Northumberland, Pennsylvania, of the Museum recently erected there, of his grave, and of his apparatus. ISIS

The Birth of the American Chemical Society at the Priestley House in 1874, by S. A. GOLDSCHMIDT, p. 145-149. History of the Priestley House and the movement for its preservation, by WILLIAM H. WALKER, p. 150-157. PRIESTLEY's life in Northumberland and discussion of the PRIESTLEY relics on

exhibition in the museum, by C. A. BROWNE, p. 159-172. One of PRIESTLEY'S first letters written from Northumberland, Pa., by LYMAN C. NEWELL, p. 173-174. PRIESTLEY'S last defense of phlogiston, by TENNEY L. DAVIS, p. 176-183. JOSEPH PRIESTLEY as an historian of science, with some account of his philosophical apparatus existing at the present time, by C. A. BROWNE, p. 184-199. T. L. D.

Pupin, Michael Idvorsky. Fifty years' progress in electrical communications. Address of the retiring president of the American Association for the Advancement of Science, Philadelphia, December 27, 1926. *Science*, 64, 631-638, 1926. ISIS

Ramart, Pauline. Notice sur la vie et les travaux de ALBIN HALLER. *Bul. soc. chim. de France*, 1037-1092, portr., août 1926. ISIS

ALBIN HALLER (Felleringen, Ht. Rhin, 1849,03,07 — Paris, 1925, 04,29). Travaux sur le camphre ; synthèse au moyen de l'amidure de sodium. L. G.

Sabatier, Paul. La chimie moderne et MARCELLIN BERTHELOT. *Journal of Chemical Education*, 3, 1099, 1926. ISIS

An address delivered before the general meeting of the American Chemical Society at Philadelphia on September 6, 1926. T. L. D.

Smith, Edgar F. A half century of mineral chemistry in America 1876-1926. Reprinted from the Golden Jubilee Number « A half century of Chemistry in America » of the *Journal of the American Chemical Society*, 48, p. 69-88, 1926. ISIS

Truesdale, William H. Recollections of American railroads fifty years ago. *Transactions of the Newcomen Society*, 5, 97-98, London, 1926. ISIS

Watson, Thomas A. Exploring life. An autobiography. 315 p. London, APPLETON, 1926. ISIS

WATSON was ALEXANDER GRAHAM BELL'S assistant.

Wile, Frederick William. EMILE BERLINER, maker of the microphone. x + 353 p., illus. Indianapolis, BOBBS MERRILL Co., 1926. ISIS

C. — *Natural Sciences.*

Bernard, Claude (1813-1878). An introduction to the study of experimental medicine. Translated by HENRY COPLEY GREENE, with an introduction by LAWRENCE J. HENDERSON. XIX + 226 p. New York, MACMILLAN, 1927. ISIS

Thanks to the intelligent initiative of the General Education Board of New York (one of the great institutions established by Mr. ROCKEFELLER)

we have finally a translation, and a very good one, of BERNARD's famous book of 1865. Many generations of French students have learned in that book not only the principles of experimental study, but what matters more, the art of experimentation (that is, of course, if they were able to learn it). Let us hope that CLAUDE BERNARD will now render the same service to English speaking students. By way of introduction there is a penetrating essay by the Harvard physiologist, L. J. HENDERSON, and a translation of PAUL BERT's obituary. It is a pity that the editors did not think of adding a portrait; this is our only regret and criticism. G. S.

Coulon, Marcel. Un défenseur de J. H. FABRE. *Mercure de France*, 1. 06. 1926, 477-485. ISIS

Ecrit en hommage à FABRE, et contre RABAUD et PICARD, à propos d'un ouvrage de MAURICE THOMAS : JEAN HENRI FABRE et la science : réponse à ETIENNE RABAUD, avec une contribution à l'étude de l'instinct (LAMERTIN, Bruxelles). Lorsque COULON écrit qu' « il y a dans la campagne antifabrienne une mauvaise action scientifique et une vilaine action morale », ne se doute-t-il pas que le même reproche peut lui être adressé ? (voir *Isis*, 5, 240; 7, 143,236; 8, 191, 566, 570). L. G.

Dellenbaugh, Frederick Samuel. A canyon voyage. The narrative of the second Powell Expedition from Wyoming, and the explorations on land, in the years 1871 and 1872. XXVII + 277 p, maps, plates and portr. 2nd edition. New Haven, Yale University Press, 1926. ISIS

First published in 1908.

Easton, C. Vijftig jaar poolonderzoek 1875-1925. *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap*, 2d Reeks, 43, No. 1, 17-54, 5 maps, 1926. ISIS

Hervé, Georges, et Quatrefages, L. de. ARMAND DE QUATREFAGES DE BRÉAU, médecin, zoologiste, anthropologue (1810-1892). *Bull. de la Soc. franç. d'hist. de la méd.*, 20, 309-30, 1926; 21, 17-35, 1927. ISIS

Hillemand, Constant. CLAUDE BERNARD. Sa vie et son œuvre. 32 p. *Les Tablettes de la Connaissance*, mars 1926. ISIS

Étude suggérée par le livre de JEAN LOUIS FAURE (1925, *Isis*, 8, 567). L'auteur bien connu par de très nombreuses publications médicales et positivistes (depuis 1899), s'est surtout efforcé de prouver que BERNARD a été influencé profondément par AUGUSTE COMTE, sans toutefois le reconnaître. (Suivi d'une liste des publications de l'auteur). G. S.

Hillemand, Constant. AUGUSTE COMTE et CLAUDE BERNARD. *Le Progrès médical* du 7 déc. et du 18 déc. 1926. ISIS

Ces articles continuent l'exposé de la thèse que BERNARD a plagié COMTE. G. S.

Hyde, Jesse Earl. Collecting fossil fishes from the Cleveland shale. *Natural History*, 26, 496-504, illust., 1926. ISIS

Janicki, Constantin. GIOVANNI BATTISTA GRASSI. Ein grosser Zoologe und Parasitologe Italiens (1854-1925). *Die Naturwissenschaften*, 14, 225-231, 261-269, 1926. ISIS

Keller, Friedrich. ANTON SCHNEIDER (1831-1890) und die Geschichte der Karyokinese. (*Mediz. Diss.*) 17 S. Freiburg i. Br., ISIS

(Langstroth, L. L.) The journal of L. L. LANGSTROTH. *Science*, 64, 399, 1926. ISIS

« In 1852 the Reverend L. L. LANGSTROTH, a Congregational minister in Philadelphia, devised a bee-hive with movable frames, the foundation of all modern beekeeping. The following year he published a book on beekeeping, in which he described his new hive, and this has become a classic in beekeeping literature. In his many articles on beekeeping in various journals he makes frequent reference to a journal, which he kept consistently for a period of forty-five years, but never did he tell just what material was included in it. » This journal has finally been discovered and presented to the Beekeeping Library of Cornell University. G. S.

Loesener, Theodor. RUDOLF SCHLECHTERS Leben und Wirken (1872-1925). *Notizblatt d. Bot. Garten und Museum Berlin-Dahlem*, 9, 912-958, 1926. ISIS

Lull, Richard Swann. Early fossil hunting in the Rocky Mountains. *Natural History*, 26, 455-461, illustr. 1926. ISIS

Osborn, Henry Fairfield. A priceless DARWIN letter. *Science*, 64, 476-477, 1926. ISIS

Letter to HUXLEY apropos of the publication of the Origin of the Species by MURRAY. The first edition was sold the first day Nov. 24, 1859. This first printing may be recognized by « the presence on page 184 of the following passage, which was omitted in subsequent printings :

« In North America the black bear was seen by HEARNE swimming for hours with widely open mouth, thus catching, like a whale, insects in the water. Even in so extreme a case as this, if the supply of insects were constant, and if better adapted competitors did not already exist in the country, I can see no difficulty in a race of bears being rendered, by natural selection, more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale. »

Osgood, Wilfred H. NED HOLLISTER (1876-1924). *Annual Report for 1925 of the Smithsonian Institution*, Washington, D. C., 599-619, 2 plates, with portrait and bibliography, 1926. ISIS

(Pasteur). Œuvres de PASTEUR, éditées par R. VALLERY-RADOT. Tome

IV. Études sur la maladie des vers à soie. Paris, MASSON, 1926. ISIS

Pastore, Franco. Nuestra mineralogía y geología durante los ultimos cincuenta años (1872-1922). Cincuentenario de la Sociedad cientifica Argentina (1872-1922) : Evolución de las ciencias en la Republica Argentina, VI. 47 p. Buenos Aires, 1925. ISIS

By far the greater part of the contributions to our knowledge of the mineralogy and geology of the Argentine Republic during the last half century has been made by German scholars or those of German extraction. J. K. W.

(Roumania). Serviciul geografic al armatei Române. 50 ani de activitate 1874-1924. 104 p., 18 maps and 16 illus. Bucarest, 1924. ISIS

A sketch of the work of the geographical service of the Rumanian army during its first fifty years of activity, with specimens of topographical sheets and diagrammatic maps showing the progress of triangulation. J. K. W.

Strahan, Sir **Aubrey.** Sir ARCHIBALD GEIKIE. *Annual Report for* 1925 *of the Smithsonian Institution*, Washington, D. C., 591-598, portrait, 1926. ISIS

Reprinted from the *Quarterly Journal of the Geological Society*, 81, July 4, 1925.

Stresemann, Erwin. Stand und Aufgaben der Ornithologie 1850 und 1925. *Journal f. Ornithologie*, 74, 225-232, 1926. ISIS

Walcott, Charles Doolittle (1850-1927). Obituary by A. S. W. in *Nature*, 119, 325-326, 1927. ISIS

D. — *Medical Sciences.*

Bulloch, William. Some aspects of LISTER's scientific work. *Nature*, 119, 531-533, 1927. ISIS

Cameron, Sir **Hector Clare.** Reminiscences of LISTER and of his work in the wards of the Glasgow Royal Infirmary, 1860-1869. 45 p. Glasgow, JACKSON-WYLIE, 1927. ISIS

Delassus, A. Les grandes découvertes de la médecine de 1876 à 1926. *Revue des questions scientifiques*, 20. 04. 1926, 389-411. ISIS

Gilbert; Augustin (1858-1927). Obituary by E. GLEY, *Revue gén. des Sciences*, 37, 164-165, 1927. ISIS

Godlee, Sir **Rickman John.** LORD LISTER. Nach der 3. durchgesehen Auflage (1924) übersetzt von E. WEISSCHEDEL, VIII + 351 p., 12 pl., 9 fig. in text. Leipzig, VOGEL, 1925. ISIS

Goodman, Herman. JOHN ADDISON FORDYCE (1858-1925), American dermatologist. *Medical Life*, 34, 83-84, 1927. ISIS

Guerreiro, Luis. MANUEL BENTO DE SOUSA (1833-1899). *Arquivo de Anatomia e Antropologia*, 9, 773-796, 1925-26. ISIS

Kaufmann, Jacob. BERNHARD NAUNYN (1839-). An appreciation. *Medical Life*, 34, 21-29, 2 pl., 1927. ISIS

Kolmer, John A. The history of laboratory research in the past fifty years. *Medical Life*, 34, 3-14, 1927. ISIS

Leeson, John Rudd. LISTER as I knew him. 212 p. London, BAILLIÈRE, TINDALL and COX, 1927. ISIS

(Lister). The LISTER centenary celebrations in London. *Nature*, 119, 570-572, 1927. ISIS

(Lister). LISTER centenary exhibition handbook. (Wellcome Historical Medical Museum). 216 p. London, 1927. ISIS

(Lister). LISTER and the Lister Ward in the Royal infirmary of Glasgow, A centenary contribution. XVI + 132 p. Glasgow, JACKSON-WYLIE. 1927. ISIS

Martin, C. J. LISTER's contribution to preventive medicine. *Nature*, 119, 529-531, 1927. ISIS

Obermeier, Otto. Die Entdeckung von fadenförmigen Gebilden im Blut von Rückfallfieberkranken (1873). Hrg. von HEINZ ZEISS. (*Klassiker der Medizin*, Bd. 31). 52 S., Leipzig, BARTH, 1926. ISIS

Durch die Entdeckung der Rückfallfieberspirochäte durch OTTO OBERMEIER im lebenden Blutstropfen begann eine neue Zeit für diese Forschung. An der Schwelle neuer Erkenntnisse hatte er das Tor zu einem Forschungsneuland aufgestossen, in das ein Jahrzehnt später die Pioniere zur Eroberung einzogen. Sein Tat stand leuchtend über ihnen, gebucht und mit erdenklich einfacher Technik von jedem bald als Selbstverständliches beübt. OTTO OBERMEIER fiel am 20. August 1873 der Cholera zum Opfer. Er ist nicht nur der Gründer der deutschen Parasitologie, sondern auch in ganz besonderem Masse der deutschen Tropenmedizin.

Pagel, Albert. Zur Errinnerung an JULIUS LEOPOLD PAGEL. *Janus* 30, 179-191, 1926. ISIS

JULIUS LEOPOLD PAGEL (Pollnow, Poméranie, 1851,05,29 — 1912, 01,31) s'est surtout intéressé à l'histoire de la médecine au moyen-âge. L. G.

Podiapolsky, P. GREGOR N. MÜNCH (1836-1896). *Archiv für Geschichte der Med.*, 18, 361-367, 1 Taf., 1926. ISIS

Russian anatomist and physician. Biography and bibliography, portrait.

Rolleston, Sir Humphry. Sir GEORGE MURRAY HUMPHRY, M. D., F. R. S., professor of anatomy (1866-1883) and of surgery (1883-1896) in the University of Cambridge, England. *Annals of Medical History*, 9, 1-11, 1927. ISIS

Vilhena, Henrique de. JOSÉ ANTÓNIO SERRANO. *Arquivo de Anatomia e Antropologia*, 9, 383-414, 1925-26. ISIS

Vilhena, Henrique de. Cartas de JOSÉ ANTÓNIO SERRANO. Coligidas e apresentadas. *Arquivo de Anatomia e Antropologia*, 9, 579-634, 1925-26. ISIS

Wilson, Robert Macnair. The beloved physician : Sir JAMES MACKENZIE (1853-1925). London, MURRAY, 1926. ISIS

E. — *Alia.*

Andler, Charles. NIETZSCHE, sa vie et sa pensée. 4 vol. parus (sur 5). Paris, BOSSARD, 1920-1922. ISIS

Baillot, A. Influence de la philosophie de SCHOPENHAUER en France (1860-1900). Étude suivie d'un essai sur les sources françaises de SCHOPENHAUER. VIII + 358 + 78 p. *Biblioth. d'hist. de la philosophie*, J. VRIN, Paris, 1927. ISIS

Après une introduction où (p. 1-20) l'auteur situe l'état des esprits en France vers 1850-60, alors que se ralentit la confiance dans le progrès, et que les théories schopenhauériennes commencent à être connues grâce à des articles de revues (la première traduction est de 1860 seulement : Les Aphorismes), il examine l'influence de SCHOPENHAUER sur les philosophes (pp. 21-151) : RENAN, TAINE, RENOUVIER, LACHELIER, FOUILLÉE, GUYAU, AMIEL, BERGSON, etc., etc. et dans la littérature (pp. 151-328) — Dans son étude des sources de SCHOPENHAUER, il s'intéresse surtout aux auteurs du XVIII[e] siècle : BAYLE, MONTESQUIEU, VOLTAIRE, ROUSSEAU, HELVÉTIUS, CHAMFORT, BUFFON, CABANIS, BICHAT, MAINE DE BIRAN, pour noter d'ailleurs que « s'il doit beaucoup aux philosophes français, il ne leur a pas emprunté le principe même de sa philosophie ». L. G.

Dauriac, L. LOUIS LIARD. *Revue de métaphysique et de morale*, 33, 397-423, 1926. ISIS

Examen de l'œuvre philosophique de LIARD (Falaise, 1846-1917) : Des définitions géométriques et des définitions empiriques, 1873; De Democrito philosopho, 1873; Les logiciens anglais contemporains, 1878; La science

positive et la métaphysique, 1879; Descartes, 1881; Logique, 1884. Voir *Isis*, 5, 253.

Girard, Henri et Moncel, Henri. Bibliographie des œuvres d'ERNEST RENAN. 281 p., avec un portrait de RENAN. (Publications de la Société Ernest-Renan, Histoire religieuse, t. 1). Paris, Presses Universitaires de France, 1923. ISIS

Reviewed by GABRIEL FERRAND, *Journal Asiatique*, 202, 310, 1923.

Hirst, Francis Wrigley. Early life and letters of JOHN MORLEY. Two volumes. London, MACMILLAN, 1927. ISIS

Houtin, A. et Couchoud, P. L. (*édit.*). Du sacerdoce au mariage. I. Le Père HYACINTHE (1867-1870); journal intime et lettres. II. GRATRY et LOYSON (1870-1872) ; lettres et journaux intimes. 240 + 278 p., 2 portraits. Les édit. RIEDER, Paris, 1927. ISIS

Le mariage (1872,09,02) du Père HYACINTHE LOYSON (1827,03,10 — 1912, 02,09), carme déchaussé, prédicateur illustre, avec Madame EMILIE J. MERIMAN « mystérieuse et miraculeuse », comme la qualifie le P. GRATRY (1805-1872) a été un des grands faits religieux du XIX^e S. Il fut la conclusion d'un drame intérieur qui dura quatre ans (la première rencontre de CHARLES LOYSON (P. HYACINTHE) et de Mme MERIMAN est du 17 juin 1867), et où la nature généreuse et intensément religieuse du P. HYACINTHE, et celle du P. AUG. J. J. GRATRY, oratorien, membre de l'académie française, furent l'une et l'autre déchirées entre leurs aspirations de prêtres et un profond amour. Leurs lettres, leur journal, les lettres de Mme MERIMAN, nous permettent d'assister à ce drame poignant, dans lequel se joue la question du célibat des prêtres. A l'arrière-plan, le concile du Vatican qui décrète l'infaillibilité du pape (1870,07,18), la guerre de 1870, le schisme de J. J. IGNAZ DOELLINGER (mars 1871) qui met sur ses pieds le mouvement vieux-catholique. — Portraits du P. HYACINTHE et de Mme MERIMAN. — Le premier volume est précédé d'une introduction de ALBERT HOUTIN (1867-1926) sur le célibat de l'abbé PERREYVE, lui aussi tourmenté par son isolement, mais qui n'en put pas sortir, ainsi d'ailleurs que le P. GRATRY. (HENRI PERREYVE, 1831-1865). L. G.

Lasserre, Pierre. RENAN et nous. (Les cahiers verts). 243 p. Paris, GRASSET, 1923. ISIS

Lasserre, Pierre. La jeunesse d'ERNEST RENAN. Histoire de la crise religieuse au XIX^e siècle. 2 vol. Paris, GARNIER frères, 1925. ISIS

Leroux, Emmanuel. Le plus humain des philosophes : WILLIAM JAMES, d'après sa correspondance. *Revue de métaphysique et de morale*, 33, 227-252, 1926. ISIS

Liveing, Suzan. A nineteenth-century teacher, JOHN HENRY BRIDGES,

M. B., F. R. C. P. By his niece, with a preface by L. T. HOBHOUSE, and an introduction by PATRICK GEDDES. xv + 262 p., portrait. London, KEGAN PAUL, 1926. ISIS

JOHN HENRY BRIDGES (1832-1906) was perhaps the most philosophically minded and the best equipped of the English positivists and if he had not been obliged to devote his time and energy to his duties as medical inspector to the Local Government Board, the fortunes of English positivism might have been different. In spite of his many professional activities he found time to write a number of books and essays on COMTE's doctrine, positive religion, etc. He was by far the main contributor to the New Calendar of Great Men edited by FREDERIC HARRISON. He was a very lovable man and the love he inspired to all those who approached him is well reflected in this biography. The most touching pages are those (238-240) relating the great disaster which befel him towards the end of his life and his noble way of reacting. He was foolishly persuaded to undertake a new edition of BACON's *Opus majus*, in spite of the fact that he had had no palaeographic training. This edition, published by the Clarendon Press in 1879 was unsatisfactory. BRIDGES realized the mistake he had made and with admirable dignity he set about to repair it. The amended edition appeared in 1900. The introduction (to both editions) is a very clear analysis of the *Opus Majus*, one of his most valuable publications. The present biography is illustrated by means of a reproduction of FRED YATES's portrait of BRIDGES. It might properly be placed on the same shelf as the lives of saints. For further reference to English positivism see F. S. MARVIN's essay on FREDERIC HARRISON in *Isis*, 6, 387-390. G. S.

Marston, Maurice. Sir EDWIN CHADWICK, 1800-1890. (The Road-maker Series). 186 p. London, PARSONS, 1925. ISIS

Milhaud, Gaston. Etudes sur COURNOT. 154 p. J. VRIN, Paris, 1927. ISIS

C'est sur le désir même de GASTON MILHAUD que ses travaux sur ANTOINE AUGUSTE COURNOT (Gray, 1801,08,28 — Paris, 1877,03,31), épars dans diverses revues, et publiés de 1902 à 1911, ont été réunis en volume. Avant lui (*Isis*, 3, 391-5), COURNOT avait été un « scientifique » devenu philosophe; le mathématicien n'avait pas tardé à se révéler économiste, historien et philosophe. Mais MILHAUD envisage le philosophe, et ne rappelle guère que dans les trois premières pages de ces études les travaux purement mathématiques de COURNOT dont il suit la pensée à travers : Essai sur les fondements de nos connaissances et sur le caractère de la critique philosophique (2 vol., 1851), Traité de l'enchainement des idées fondamentales dans les sciences et dans l'histoire (2 vol., 1861), Considérations sur la marche des idées et des événements dans les temps modernes (2 vol., 1872), et Matérialisme, vitalisme, rationalisme (1875). Voici les titres des chapitres du livre : le développement de la pensée de COURNOT; la définition du hasard de COURNOT; le hasard chez ARISTOTE et chez COURNOT; la raison chez COURNOT; la science et la religion chez COURNOT (communication à la Société française de philosophie, le 4 mai 1911, suivie de la discussion à laquelle elle a donné lieu): COURNOT et le pragmatisme scientifique contemporain. L. G.

Milhaud, Gaston. La philosophie de RENOUVIER. 164 p. J. VRIN, Paris, 1927, ISIS

« Ces études réprésentent le résumé du cours publique que MILHAUD consacra, en 1905, à la faculté de Montpellier, à la philosophie de RENOUVIER. Elles ont paru, à cette époque, dans la *Revue des cours et des conférences*. GASTON MILHAUD en avait revu le texte avec soin en vue d'une réédition éventuelle ». — La personnalité et l'œuvre tout entière de RENOUVIER (1815-1903) sont examinées d'une façon très attachante ; on a l'impression qu'on entend la voix familière du professeur qui, dans sa recherche des Conditions et des limites de la certitude logique (1894), s'était rapproché sur bien des points des Essais de critique générale (1854-1864) ; c'est d'ailleurs à l'analyse de ces quatre Essais que MILHAUD avait consacré la majeure partie de son cours. L. G.

Pommier, Jean (Joseph Marie). La pensée religieuse de RENAN, 236 p. Paris, RIEDER, 1925. ISIS

Rawnsley, Willingham Franklin. EDWARD THRING, maker of Uppingham School, headmaster 1853-1887. iv + 103 p. London, KEGAN PAUL, 1926. ISIS

Smithsonian Institution. The Smithsonian Institution. *Annual Report for* 1925, Washington, D. C., 575-590, 21 plates, 1926. ISIS

Historical account with portraits and many other illustrations.

Walston, (formerly **Waldstein**) Sir **Charles** (1856-1927). Obituary in *Nature*, 119, 534, 1927. ISIS

XXth Century.

A. — *Mathematics.*

Simonart, F. Étude sur les travaux mathématiques de CHARLES DE LA VALLÉE POUSSIN. *Ann. de la Soc. scientif. de Bruxelles*, 45, 99-122 1926. ISIS

Wright, Fred. E. Memorial of ROBERT SIMPSON WOODWARD. *Bulletin of the Geological Society of America*, 37, 115-134, pl. 7, 1926. ISIS

Biography with portrait and bibliography of the second president and real founder of the Carnegie Institution. See my own note in *Isis*, 7, 112-114.

B. — *Physical Sciences and Technology.*

Auerbach, Felix. The ZEISS works and the CARL ZEISS foundation in Jena : their scientific, technical and sociological development and importance popularly described. Translated from the fifth

German edition by R. KANTHACK. IV + 273 p. London, W. and G. FOYLE, 1927. ISIS

Berthelot, Daniel (1865-1927). Obituary by CHARLES BARROIS, *Revue gén. des Sciences*, 37, 162-164, 1927. ISIS

Bligh, Neville M. The evolution and development of the quantum theory. 112 p. London, ARNOLD, 1926. ISIS

Eisenmann, J. et **Rocard, Y.** Le principe de correspondance et l'état actuel de la théorie des quanta, *Revue de métaphysique et de morale*, 33, 183-200, 1926. ISIS

Hazard, Daniel L. Terrestrial magnetism in the twentieth century. *Annual Report for* 1925, *Smithsonian Institution*, Washington, D. C., p. 243-256, 1926. ISIS

Address of the retiring president of the Philosophical Society of Washington, presented at the meeting on Jan. 10, 1925. Reprinted from the *Journal of the Washington Academy of Sciences*, 15, No. 6, Mar. 19, 1925.

Matignon, Camille. The manufacture of radium. Translated from *Revue Scientifique*, Aug. 3, 1925, p. 524-532. *Annual Report for* 1925, *Smithsonian Institution*, Washington, D. C. p. 221-234, 4 plates, 1926. ISIS

C. — *Natural Sciences.*

Amundsen, Roald and **Ellsworth, Lincoln.** The first crossing of the polar sea. With additional chapters by other members of the expedition. London, HUTCHINSON, 1927. ISIS

Da Fano, Corrado Donato (1879-1927). Obituary in *Nature*, 119, 534, 1927. ISIS

Green, (Commander) **Fitzhugh.** (ROBERT EDWIN) PEARY (1856-1920), the man who refused to fail. VIII + 404 p., 20 illus., maps. New York, PUTNAM, 1926. ISIS

Leersum, E. C. van. The discovery of vitamines. *Science*, 64, 357, 1926. ISIS

Apropos of an anticipation of that discovery by the late C. A. PEKELHARING professor of physiological chemistry in Utrecht, published in Dutch in the *Nederlandsch Tijdschrift voor Geneeskunde*, 2, 111, 1905. G. S.

D. — *Medical Sciences.*

Crichton-Browne, Sir **James.** Stray leaves from a physician's port-

folio. IX + 351 p. London, HODDER and STOUGHTON, 1927. ISIS

Rothwell, John J. WILLIAM BURWELL TRIMBLE (1870-1925), American dermatologist. *Medical Life*, 34, 85-86, 1927. ISIS

Vilhena, Henrique de. Correspondência de A. AURÉLIO DA COSTA FERREIRA. *Arquivo de Anatomia e Antropologia*, 9, 647-697, 1925-26. ISIS

E. — *Alia.*

Baruzi, Jean. Philosophes et savants français du XX^e^ siècle. III. Le problème moral. VIII + 204 p., FÉLIX ALCAN, Paris, 1926. ISIS

Comme les deux premiers volumes de cette collection (*Isis*, 9, 178), celui-ci est constitué par des extraits d'auteurs auxquels JEAN BARUZI ajoute d'heureuses notes bio-bibliographiques. Les extraits les plus importants sont empruntés à EMILE DURKHEIM (1858-1919), FRÉDÉRIC RAUH (1861-1909), LUCIEN LÉVY-BRUHL (1857-), EMILE BELOT (1859-), ALFRED LOISY (1857-), BAPTISTE MARIE JACOB (1858-1909), PAUL DESJARDINS (1859-), MAURICE BARRÈS (1862-1926), JEAN JAURÈS (1859-1914), GEORGES SOREL (1847-1922), CHARLES PÉGUY (1873-1914), ROMAIN ROLLAND (1868-), LÉON BRUNSCHVICG (1869-), etc. Ces extraits sont groupés en quatre chapitres : La technique du problème moral ; Sur la notion du « sacré » en morale ; De la morale à la religion ; La méthodologie de l'effort moral ; Esquisse d'une morale concrète. L. G.

Boucher, Maurice. La philosophie de HERMANN KEYSERLING. 284 p. Les éditions RIEDER, Paris, 1927. ISIS

HERMANN KEYSERLING (Koenno, Livonie, 1880,07,20 —), par sa critique du temps présent, sa définition de la sagesse d'où nous peut venir le bonheur, par sa défense de la vie spirituelle menacée par le mécanisme, par la confiance qu'il a malgré tout dans la civilisation occidentale, par l'influence de l'École de Sagesse qu'il a fondée à Darmstadt « la première école où l'on ait songé à donner un enseignement sans contenu », voit son influence s'accroître chaque jour en Allemagne et pénétrer au dehors. De ses nombreuses publications en allemand ou en anglais, des articles de *Weg zur Vollendung*, organe bimensuel de l'École de sagesse, fondé en 1920, de ceux de *Leuchter*, annales de l'École de sagesse, seuls sont traduits en français : das Gefüge der Welt (1906, 2^e^ éd. 1920), sous le titre : Essai critique sur le système du monde (FISCHBACHER, 1907), et die Neuenstehende Welt (1926): Le monde qui nait (STOCK, 1926) ; il y faut ajouter des fragments du Reisetagebuch eines Philosophen (2 vol., REICHL, 1920), parus en une traduction d'ANDRÉ MAUROIS dans *les Nouvelles littéraires* du 12 juin 1926. C'est cette philosophie, que KEYSERLING lui-même n'a jamais exposée d'une façon systématique, que M. BOUCHER a entrepris de faire connaître au lecteur français, sans indication biographique. A ce point de vue, on peut voir, en dehors de la bibliographie donnée par BOUCHER, une étude de FRÉDÉRIC LEFEBVRE : une heure avec KEYSERLING, dans *les Nouvelles littéraires* du 22 mai 1926, des Souvenirs sur KEYSERLING, de CHARLES DU BOS (*Nouvelles littéraires* du 12 juin 1926),

et l'étude que lui a consacrée LOUIS BRUN, sous le titre : HERMANN KEYSERLING et son école de la sagesse, in *Revue germanique*, 18, 1-12, 103-113, 1927. Voir aussi *Isis*, 5, 191-93; 8, 647. L. G.

Buonaiuti, Ernesto. Le modernisme catholique, traduit de l'Italien par RENÉ MONNOT. 206 p., RIEDER, Paris, 1927. ISIS

Ce livre du professeur d'histoire du christianisme à l'université de Rome est à la fois une histoire du modernisme catholique dans le premier quart du XX^e^ S., et, dans son dernier chapitre, un nouveau manifeste de ce modernisme. Après avoir montré le fonctionnement de l'inquisition exercée par la congrégation du Saint-Office, la condamnation du modernisme naissant par le décret du St-Office du 3 juillet 1907, et l'encyclique *Pascendi Domini gregis* du 8 septembre 1907 renforcé par le *Motu proprio* du 8 septembre 1910, après lequel « on aurait pu dire que, dans tout le monde catholique, chaque ministre du culte avait sa pierre au cou et en portait péniblement le poids terrible », l'auteur consacre des chapitres séparés au modernisme en France, en Italie, en Angleterre, en Allemagne. En France : MAURICE BLONDEL (bien qu'il se soit déclaré exempt de tout lien de solidarité avec le mouvement moderniste), ALFRED LOISY. En Italie, SALVATORE MINOCCHI, GUGLIELMO QUADROTTA, le groupe des rédacteurs de *Nova et Vetera*. En Angleterre, GEORGE TYRELL. En Allemagne, HERMANN SCHELL, JOSEPH SCHNITZER, RUDOLPH OTTO, FRÉDÉRIC HEILER. L. G.

Schnyder, Casimir. EDUARD HUBER (1879-1914), ein schweizerischer Sprachengelehrter, Sinolog und Indochinaforscher; sein Leben und seine wissenschaftliche Bedeutung, nebst einer Auswahl seiner Arbeiten. VIII + 203 p., 40 ill., 3 maps. Zurich, Orell FÜSSLI, 1920. ISIS

Reviewed by PAUL PELLIOT in *T'oung Pao*, 20, 363, 1921.

PART II.

HISTORICAL CLASSIFICATION

Including only the items which could not be included in Part I — the fundamental (centurial) classification. Hence a student of Muslim science, for example, should not peruse simply the notes collected below under the heading « Islam », he should examine as well those included above under the headings VIIth century, VIII century, etc.

CONTENTS :

I. — *Antiquity* : 1. Antiquity (generalities) ; 2. Egypt ; 3. Babylonia and Assyria ; 4. Greece ; 5. Rome.

II. — *Middle Ages* : 6. Middle Ages (generalities) ; 7. Byzantium.

III. — *Oriental Science and Civilization* : 8. Asia (generalities; Western Asia ; Central Asia ; Eastern Asia) ; 9. India ; 10. China ; 11. Japan ; 12. Israel ; 13. Iran ; 14. Islam.

I. ANTIQUITY.

1. — ANTIQUITY (GENERALITIES).

Brunn, W. v. Der Stelzfuss von Capua und die antiken Prothesen. 4 Abb. und 1 Taf. *Archiv für Geschichte der Med.*, 18, 351-360, 1926. ISIS

Engel, Wilhelm. Die Schicksalsidee im Altertum. Religionswissenschaftliche Untersuchung. (*Veröff. d. Indogerm. Seminars d. Univ. Erlangen*, Bd. II.) VIII + 120 S. Erlangen, PALM und ENKE, 1926. ISIS

Reviewed by A. LESKY, *Deutsche Literaturzeitung*, 665-668, 1927.

Cirenaica, Governo della. Studi. I testi geografici antichi relative alla Cirenaica. Tradotti. (*Rapporti e monografie coloniali. Serie* 1, N. 5). 52 p., 4 maps, 1924. ISIS

Italian translations of those parts of the writings of Greek, Latin, and Arabic authors which relate to Cyrenaica, with diagrammatic maps. J. K. W.

Gundel, Wilhelm. Individualschicksal, Menschentypen und Berufe in der antiken Astrologie. *Jahrbuch der Charackterologie*, hrsg. von EMIL UTITZ, IV. Jahrg., S. 133-193, Berlin, Pan Verlag, 1927. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Med.*, 26, 138, 1927.

Hopkins, Arthur John. Transmutation by color. A study of earliest alchemy. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 9-14, 1927. ISIS

A restatement of the views explained by the author in *Isis*, 7, 58-76. G. S.

Huber, E. und **Philippe, Max.** Bier und Bierbereitung bei den Völkern der Urzeit. 1. Babylonien und Aegypten. (*Veröff. d. Ges. für die Geschichte und Bibliographie d. Brauwesens*). 60 S., mit vielen Abb. Berlin, Ges. f. d. Gesch. u. Bibliogr. d. Brauwesens, Institut f. Gärungsgewerbe, 1926. ISIS

Reviewed by R. ZAUNICK, *Mitt. zur Geschichte der Med.*, 26, 121, 1927.

Newcomb, Rexford. Ceramic art among the Greeks and Romans. (*Architectural monographs on tiles and tilework*, no. 4). 29 p., 48 fig. Beaver Falls, Penn., Associated Tile Manufacturers, 1926. ISIS

Pottier, Edmond. L'art hittite. Premier fascicule. 100 p., 121 fig. Paris, Librairie Orientaliste PAUL GEUTHNER, 1926. (62.50 frs.) ISIS

« Ce que nous aurons de particulier à montrer, c'est que l'art hittite ne joua pas à l'égard de l'art assyrien le rôle subalterne d'imitateur et de disciple que lui attribuait PERROT avec la plupart des savants de son temps : il eut, croyons-nous, un style et un caractère propres, différents de ceux de l'Assyrie et, en plusieurs cas, il semble qu'au contraire l'art assyrien emprunta aux Hittites. Il faut donc sur ce point réformer les idées anciennes. La démonstration a déjà été indiquée ou développée par divers savants; elle n'est pas nouvelle, mais nous espérons y ajouter quelques considérations personnelles, destinées à mettre en lumière la valeur de l'art cappadocien et syrien. On m'excusera donc d'entrer, quand il le faudra, dans des descriptions un peu détaillées des monuments, car c'est le seul moyen de faire sentir l'originalité de l'architecture et de la sculpture hittites, qui se rattachent au grand ensemble de l'art mésopotamien et qui en sont, comme l'art assyrien lui-même, un rameau détaché, mais plus ancien. Pour le même motif il nous a paru utile de donner le plus grand nombre possible de figures. Nous avons constitué, à cet effet, une sorte de Corpus, un recueil à peu près complet de tous les monuments hittites connus. » 1. Aperçu historique. 2. Antériorité de l'art hittite sur l'art assyrien. 3. Karkémich. 4. Zendjirli. 5. Sakjé-Geuzi.

Reymond, Arnold. History of the sciences in Greco-Roman antiquity. Translated by RUTH GHEURY DE BRAY. X + 245 p. London, METHUEN, 1927. ISIS

French original edition, 1924, reviewed in *Isis*, 7, 252.

Vinaj, Andrea. La terapia idrica fra i Greci ed i Romani. *Riv. di storia d. sc. med. e natur.*, 17, 173-188, 1926. ISIS

Weege, Fritz. Der Tanz in der Antike. 191 p., 246 fig. Halle a. S., NIEMEYER, 1926. ISIS

Reviewed by GEORG LIPPOLD, *Deutsche Literaturzeitung*, 22-25, 1927.

Weindler, Fritz. Mytische Geburtszenen in der antiken Kunst; eine medizin-geschichtliche Studie. *Janus*, 30, 271-295, 14 fig. 1926. ISIS

2. — EGYPT.

Boreux, Charles. Etudes de nautique égyptienne, l'art de la navigation en Egypte jusqu'à la fin de l'ancien empire. Fasc. 1. (*Mémoires publiés par les membres de l'Institut Français d'Archéologie Orientale du Caire*, t. 15). 240 p. Le Caire, 1924. ISIS

Carter, Howard. The tomb of TUT-ANKH-AMEN, discovered by the late EARL OF CARNARVON and HOWARD CARTER. Vol. II. XXXIV + 277 p., 153 illust. from photographs by HARRY BURTON. London, CASSELL, 1927. ISIS

Daressy, G. Une représentation égyptienne du pèsement des actions sur un papyrus du Musée du Caire. 1 pl. *Monuments et mémoires publiés par l'Académie des Inscriptions*, 25, 93-104, 1921-22. ISIS

Dussaud, René. La digue du lac de Homs et le « Mur égyptien » de STRABON. *Monuments et mémoires publiés par l'Académie des Inscriptions*, 25, 133-141, 1921-22. ISIS

« Nous concluons donc que la digue du lac de Homs, identifiée au « mur égyptien » de STRABON, a été certainement élevée à une époque fort antérieure à l'époque romaine et nous tenons pour vraisemblable qu'elle est l'œuvre des Égyptiens du Nouvel Empire. »

Ebbel, B. Die ägyptischen Krankheitsnamen. *Ztschr. für ägyptische Sprache und Altertumskunde*, S. 13-20, 1926. ISIS

Continuation of articles previously published ibidem 1924 (*Isis*, 9, 180).

Erman, Adolf, und **Grapow, Hermann.** Wörterbuch der ägyptischen Sprache, im Auftrage der deutschen Akademien herausgegeben. Bd. I., Lief. 1,2. Leipzig, HINRICHS, 1925-26. ISIS

Reviewed by H. O. LANGE, *Deutsche Literaturzeitung*, 2272-2274, 1926.

Gardiner, Alan H. Egyptian grammar : being an introduction to the study of hieroglyphs. XXVIII + 595 p., illus., 2 pl. Oxford, Clarendon Press, 1927. ISIS

Hurry, Jamieson B. IMHOTEP, the vizier and physician of King ZOSER and afterwards the Egyptian god of medicine. XVI + 118 p. Oxford, University Press, 1926. ISIS

Kleppisch, K. Willkür oder mathematische Überlegung beim Bau der Cheopspyramide? 38 S. München, OLDENBOURG, 1927. (M 1.) ISIS

Further discussion against LUDWIG BORCHARDT. The author is a warm defender of the theory according to which the Cheops pyramid is dominated by geometrical purposes. For example : « Die Gesamtoberfläche der Cheopspyramide erscheint nach dem Goldnen Schnitte geteilt, derart, dass sich die Grundfläche zur Mantelfläche wie die Mantelfläche zur Gesamtoberfläche verhalt. » BORCHARDT considers such conceptions fantastic; I agree with him. G. S.

Lacau, P. Les statutes « guérisseuses » dans l'ancienne Egypte. 2 pl. *Monuments et mémoires publiés par l'Académie des Inscriptions*, 25, 189-209, 1921-22. ISIS

Lucas, Alfred. Ancient Egyptian materials. VIII + 242 p. New York, LONGMANS, GREEN, 1926. ISIS

Moret, Alexandre. Le Nil et la civilisation égyptienne. (*L'évolution*

de l'humanité, dirigée par HENRI BERR.) XVII + 573 p. Paris, Renaissance du Livre, 1926. ISIS

Reviewed by T. GEORGE ALLEN, *American Historical Review*, 32, 300-301, 1927.

Morgan, Jacques de. L'Égypte et l'Asie aux temps antéhistoriques. *Journal Asiatique*, 203, 117-159, 1923. ISIS

Morgan, Jacques de. La préhistoire orientale. Ouvrage posthume publié par LOUIS GERMAIN. T. II. L'Égypte et l'Afrique du Nord, VI + 438 p., 5 pl., 455 fig. PAUL GEUTHNER, Paris, 1926. ISIS

Pour l'analyse du premier volume de cet ouvrage, voir *Isis*, 8, 519-521. — L'auteur, qui fut de 1892 à 1897 Directeur des Antiquités d'Égypte, étudie ici les industries paléolithique, néolithique et énéolithique, et plus longuement l'industrie de la pierre polie, en Égypte; avant d'aborder l'étude des métaux, il reproduit (pp. 161-211) avec quelques additions, l'étude qu'il avait consacrée en 1897 au tombeau royal de Négadah, découvert par lui en mars 1897, et malheureusement détruit presque complètement la même année par les fellahs. Dans le chapitre sur les métaux en Égypte (36 pp.) DE MORGAN discute, pour la nier, l'importance du Sinai comme lieu d'origine du cuivre égyptien. Le chap. suivant (248-338) est consacré à l'origine chaldéenne de la culture pharaonique en Égypte, idée mise en avant par DE MORGAN en 1909 dans ses « Premières Civilisations », appuyée sur les arts, les industries, les connaissances diverses des Égyptiens, et les langues, et assez généralement adoptée maintenant. Enfin un chapitre important (339-407) est consacré aux industries de la pierre en Tunisie, et quelques pages à l'industrie paléolithique au pays des Comalis. L. G.

Naville, Edouard. L'écriture égyptienne. Essai sur l'origine et la formation de l'une des premières écritures méditerranéennes. IX + 143 p. Paris, Librairie Orientaliste PAUL GEUTHNER, 1926. (30 frs.) ISIS

« Les égyptologues sous les yeux desquels tombera l'essai que je livre aujourd'hui au public, ne manqueront pas d'être frappés du nombre des répétitions qu'ils constateront avec mon livre paru en 1920 sur « l'évolution de la langue égyptienne et les langues sémitiques ». Ce qui m'a poussé à revenir à l'idée fondamentale que j'ai soutenue alors, c'est que je trouve qu'on s'écarte toujours plus de la conception vraie de ce qu'est l'écriture égyptienne. On continue à la séparer de la langue. Ce serait la reproduction d'une création linguistique qui n'a été parlée nulle part, et qui répond à des principes qu'on a recueillis dans l'étude des langues sémitiques, c'est-à-dire de langues beaucoup plus modernes que l'égyptien.

Il n'y a pas eu d'égyptien antérieur à la langue que nous connaissons par les hiéroglyphes. C'est un fait que j'ai toujours soutenu et qui me paraît indéniable. La preuve, c'est que l'égyptien a commencé par la figure, c'est-à-dire par le caractère le plus élémentaire de toute représentation graphique, la seule qu'ont eue les primitifs. La figure a passé au caractère alphabétique, sans que cette transition ait été complète, car l'égyptien est toujours resté figuratif ». 1. Les origines. 2. Le dessin. 3. Les commencements de l'écriture. 4. Langue littéraire et idiome local. 5. La figure. 6. Les voyelles.

7. Les transcriptions en langue étrangère. 8. L'acrophonie. 9. Le déterminatif. 10. L'ordre des signes. 11. Direction de l'écriture. 12. La transcription des hiéroglyphes. 13. L'écriture copte.

Petrie, Sir **W. M. Flinders**. Glass found in Egypt. *Transactions of the Newcomen Society*, 5, 72-76, pl. XVII to XIX, London, 1926. ISIS

Brief summary. Some 37 specimens of variegated glass (Museum of University College, London) from the earliest times to c. 300 A. D. are illustrated. G. S.

Pratt, Ida A. (under the direction of RICHARD GOTTHEIL.) Ancient Egypt : sources of information in the New York Public Library. XV + 486 p., New York, Public Library, 1925. ISIS

Reviewed by A. H. SAYCE, *Journal of the Royal Asiatic Society*, 723, 1925.

Smith, G. Elliot. The beginning of agriculture. *Nature*, 119, 81-82, 1927. ISIS

Vetter, Quido. Remarque sur la trigonométrie d'AHMOS et sur les dimensions de la pyramide de Chufu. O asopis pro péstování matematiky a fysiky, 54, p. 281-283 (undated, received in 1927). ISIS

Wreszinski, Walter. Zur altägyptischen Tierheilkunde. *Oriental. Literaturztg.*, 727-732, 1926. ISIS

3. — BABYLONIA AND ASSYRIA.

Autran, C. Sumérien et indo-européen, l'aspect morphologique de la question. XI + 198 p. Paris, GEUTHNER, 1925. ISIS

Reviewed in *Mélanges de l'Université Saint-Joseph*, 11, 373-374, Beyrouth, 1926.

Budge, Sir **Ernest Alfred Wallis.** Babylonian life and history. New edition, rewritten throughout and enlarged. XXI + 296 p. London, R. T. S., 1925. ISIS

First edition 1884; Second edition, revised, 160 p., 1886 .

Clay, Albert T. (-1925). Assyriologist. Obituary by A. H. SAYCE, *Journal of the Royal Asiatic Society*, 819-820, 1925. ISIS

Darmstaedter, Ernst. Der babylonisch-assyrische Lasurstein. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 1-8, 1927. ISIS

« Erscheint der Vergleich der Edelmetalle mit Sonne und Mond naheliegend und wahrscheinlich, so ist eine andere Zusammenstellung, die bisher kaum beachtet wurde, wohl ebenfalls nicht zu bezweifeln. Wir meinen den Parallelis-

mus : Himmel- Lasurstein. Die ausserordentliche Wertschätzung des Lasurstein (Lapis lazuli) in Babylonien-Assyrien kann, wie wir glauben nur durch die Stellung erklärt werden, die er in der Kosmologie und Theologie, bzw. Mythologie, einnahm. »

Ebeling, Erich. Leibeszauber im Alten Orient. 56 p. Leipzig, EDUARD PFEIFFER, 1925. ISIS

Reviewed by S. LANGDON, *Journal of the Royal Asiatic Society*, 550-553, 1925.

Jean, Charles François. La littérature des Babyloniens et des Assyriens. XVII + 365 p. Paris, PAUL GEUTHNER, 1924. ISIS

Mackay, Ernest. Sumerian connexions with ancient India. *Journal of the Royal Asiatic Society*, 697-701, 1 pl., 1925. ISIS

Meissner, Bruno. Die Entwickelung der assyrischen Lexikographie, bis zu CARL BEZOLDS Babylonisch-assyrischem Glossar. *Deutsche Literaturzeitung*, 1909-1916, 1926. ISIS

Meissner, Bruno. Die Kultur Babyloniens und Assyriens. (*Wissenschaft und Bildung*, Bd. 207). 108 S., mit 26 Text-Abb., 39 Tafel-Abb., 1 Karte. Leipzig, QUELLE & MEYER, 1925. ISIS

Reviewed by B. LANDSBERGER, *Deutsche Literaturzeitung*, 349-350, 1927.

Meyer, Eduard. Histoire de l'antiquité. Tome 3. La Babylonie et les Sémites jusqu'à l'époque cassite. Traduit par ETIENNE COMBE. VI + 396 p. Paris, GEUTHNER, 1926 (8 fr. suisses). ISIS

Il est inutile de souligner l'importance de l'œuvre synthétique d'EDOUARD MEYER. Il suffit de signaler cette traduction, due au conservateur de la Bibliothèque d'Alexandrie, et qui parait fort bien faite. Ce volume contient les chapitres suivants : Sources de l'Histoire de Babylonie et d'Assyrie ; Les Sémites ; Sumériens et Sémites en Sinéar ; Textes Sumériens archaïques ; Le Royaume Sémitique d'Akkad ; Le Royaume de Sumer et d'Akkad ; Elamites et Amorrites. Le Royaume de Babylone ; Hittites, Ariens, Cassites, Assyriens.

Percival, John. Wheat in 3500 B.C. *Nature*, 119, 280, 1927. ISIS

« A short time ago I received from Prof. POULTON and Sir JOHN RUSSELL small samples of wheat grains found by Prof. LANGDON, of Oxford, in a vase on the site of an ancient Sumerian house at Jamdet Nasr, seventeen miles north of Kish in Mesopotamia. The wheat, which Prof. LANGDON dates 3500 B. C., is of much interest, not only on account of its antiquity, but also because its grains are of a type associated with the more highly developed races of this cereal. The identification of the races of wheat by their grains only is always difficult, and sometimes impossible. In this case, however, I conclude, from the features noted below, that they belong to a variety of Rivet wheat (*Triticum turgidum*), a wheat, so far as I am aware, unknown to the ancient Egyptians, and the first authentic ancient sample of this race

which I have seen... Apart from its botanical interest, Prof. LANGDON's discovery is of much importance, in that it has proved that the Sumerians were in possession of an advanced type of wheat at a very early date. »

Schoch, C. Die Dattelernte in Alt-Babylon und die Fixierung der Monatsanfang nach dem Neulicht. *Zeitschrift für Assyriologie*, 37, p. 138-139, Leipzig, 1926. ISIS

Thompson, R. Campbell. Assyrian medical texts. *Proc. Roy. Soc. Med.*, 19, *Sec. Hist. Med.*, 29-78, 1926. ISIS

Additions and changes are given to the author's Assyrian medical texts, review in *Isis*, 7, 256. H. R. V.

Vetter, Quido. Babylonské násobení a dělení. (La multiplication et division babyloniennes). 8 p. Zvláštni otisk z Casopisu pro pěstováni matematiky a fysiky, ročnik Ll. (no date, received in 1927). ISIS

4. — GREECE.

Artom, Emilio. Le equazioni di secondo grado presso i Greci. *Periodico di Matematiche*, s. 4, t. 2, p. 326-342. ISIS

Reviewed by H. BOSMANS in *Revue des questions scientifiques*, octobre 1924, p. 4-6.

Cabbadias, Panagiotes. Ἱστορία τῆς Ἑλληνικῆς τέχνης. 815 p., 738 fig. Athens, A. RAPHTANIS, 1916-1924. ISIS

Reviewed by GEORGE LIPPOLD, *Deutsche Literaturzeitung*, 2388-2390, 1926.

Calhoun, George Miller. The business life of ancient Athens. Introduction by WIGGINTON E. CREED. x + 175 p. Chicago, University Press, 1926. ISIS

Dinsmoor, William Bell. Structural iron in Greek architecture. *American Journal of Archaeology*, 26, 148-158, ill., 1922. ISIS

« From these isolated instances it is possible to conclude that the Greeks did not hesitate, whenever they were doubtful of the stability of masonry, to employ concealed structural iron very much as we are doing in modern times. That they had any knowledge of the properties of wrought iron it is difficult to assume. »

Jardé, Auguste. Les céréales dans l'antiquité grecque. (*Bibliothèque des écoles françaises d'Athènes et de Rome*). XVI + 240 p. Paris, E. DE BOCCARD, 1925. ISIS

Jardé, Auguste. The formation of the Greek people. Translated by

M. R. DOBIE. (*The History of Civilization Series*). XVI + 359 p. London, KEGAN PAUL, 1926. ISIS

French edition, 1924 (see *Isis*, 7, 265).

Junge, Gustav. Besonderheiten der griechischen Mathematik. *Jahresber. Dtsch. Math.-Ver.* 35, 66-80, 150-172, 251-268, 1926. ISIS

Lagercrantz, Otto. Über die Heimat des Oberpriesters JOHANNES der griechische Alchemie. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 15-20, 1927. ISIS

The « Anonymous Philosopher » quoted by BERTHELOT (Coll. 11, 424, 8) speaks of one JOANNES *ἀρχιερέα γενόμενον τῆς ἐν εὐαγίᾳ τυθίας*. LAGERCRANTZ proposes another reading of the last words : *τῆς ἐν Νεβαιατι θεᾶς*, and discusses it. This is not convincing and there is much uncertainty about this high priest JOHANNES. « In einem Punkte herrscht unter allen Umständen keine Unsicherheit : JOHANNES kann, wenn er einer so frühen Zeit angehört, sich mit der Alchemie ebenso wenig befasst haben wie DEMOKRITOS. Der Grund ist schlechthin der, dass es vor dem 2. Jahrh. n. Chr. keine Alchemie gab. » G. S.

Montelius, Oscar. (1843-1921). La Grèce préclassique. Première partie. Stockholm, Kungl. Vitterhets Historie och Antikvitets Akademien, 1925. ISIS

Oakeley, Hilda Diana. Greek ethical thought from HOMER to the Stoics. XLII + 226 p. London, DENT, 1925. ISIS

Oder, Eugenius; Hoppe, Carolus. Corpus Hippiatricorum Graecorum Vol. 1. Hippiatrica Berolinensia. VIII + 464 p. Leipzig, TEUBNER, 1924. ISIS

Reinach, Théodore. La musique grecque 208 p. Paris, PAYOT, 1926. ISIS

Reviewed by HERMANN ALBERT, *Deutsche Literaturzeitung*, 2090-2094, 1926.

Schoch, C. Die sechs griechischen Dichter-Finsternisse. 2 S. Selbstverlag, Kuhligkshof 5, Berlin-Stieglitz (received in 1926). ISIS

1. ARCHILOCHOS, April 6, 648; 2. PINDAR, April 30, 463; 3. HOMER. April 16, 1178 (?); 4. STESICHOROS, May 19, 557; 5. CYDIAS, idem; 6. MIMNERMOS, May 28, 585 (THALES eclipse). The copy sent to me by the author contained the following MS. note : «SITZLER u. FOTHERINGHAM setzen, nach Zuschriften an mich, KYDIAS etwa 460-400. Dann käme für ihn nur die PINDAR-F.; 463 April 30 (Athen 11" 85) oder die 402 Jan. 18 (Athen 12". 1) in Betracht. G. S.

Schulten, Adolf. Die Inseln der Seligen. *Geographische Zeitschrift*, 32 Jahrg., p. 229-247, 1926. ISIS

The author identifies the Island of the Blessed with Madeira and PLATO's, Atlantis with the region of Tartessus. See BORCHARDT, Platos Insel Atlantis' *Petermanns Mitteilungen*, 73. Jahrg., 1927, p. 19-32. J. K. W.

Sigerist, Henry E. Antike Heilkunde. Siebtes Heft der *Tusculum-Schriften*, Neue Wege zur antiken Welt. 48 S. München, ERNST HEIMERAN, 1927. ISIS

Sudhoff, Karl. Alteste Stadt und Hafenbucht auf Kos und der Obsidianhandel im Agäischen Meere. *Die Naturwissenschaften*, 335-337, 1927. ISIS

Wile, Ira S. The worship of ASKLEPIOS, with special reference to the tholos and the theater. *Annals of medical History*, 8, 419-434, 1926. ISIS

5. — ROME.

Bologa, Valeriu. Deux cachets d'oculistes provenant de la Dacie romaine. *Bull. de la Soc. fr. d'hist. de la Méd.*, 21, 61-68, 1927. ISIS

Charlesworth, Martin Percival. Trade routes and commerce of the Roman empire. XX + 288 p. Cambridge, University Press, 1924. ISIS

Reviewed by JARL CHARPENTIER, *Journal of the Royal Asiatic Society*, 567-570, 1925.

Duhn, Friedrich von. Italische Gräberkunde. I. Teil. (*Bibliothek d. klass. Altertumswissensch.*) VIII + 688 S., mit 37 Taf. 12 Karten. Heidelberg, KARL WINTER, 1924. ISIS

Reviewed by WILHELM KUBITSCHEK, *Deutsche Literaturzeitung*, 2375-2380, 1926.

Francis, Alfred G. On a Romano-British castration clamp used in the rites of Cybele. *Proc. Roy. Soc. Med.*, 19, *Sec. Hist. Med.*, 95-110, 1926. ISIS

This unique bronze instrument was found in the bed of the River Thames, near London Bridge, in 1840. It is now in the C. Roach Smith Collection, Room of Roman Britain, British Museum. FRANCIS believes that it is a ritual clamp for castration, used to clamp the scrotum before it was removed by the ritual knife. Evidence is produced to show that it was used by the religious cult of Attis-Cybele at the Temple of the Great Mother at Londinium and dates from the second or third century, A. D. Half-scale illustrations accompany the article. A similar instrument is described from the Historisches Museum, Basel. H. R. V.

Frank, Tenney. Roman historiography before CAESAR. *American Historical Review*, 32, 232-240, 1927. ISIS

Grenier, Albert. The Roman spirit in religion, thought and art. Translated by M. R. DOBIE. (*The History of Civilization Series*). XVI + 423 p., 16 plates. London, KEGAN PAUL, 1926. ISIS

For French edition 1925, see *Isis*, 8, 788.

Gwynn, Aubrey Osborn (S. J.) Roman education from CICERO to QUINTILIAN. 260 p. Oxford, Clarendon Press, 1926. ISIS

Kelsey, Francis Willey. Excavations at Carthage, 1925. A preliminary report. New York, MACMILLAN, 1926. ISIS

Müller, Reiner. Die Geographie der Peutingerschen Tafel in der Rheinprovinz, in Holland und Belgien. *Geographischer Anzeiger*, 27 Jahrg., p. 210-217, 1926. ISIS

The author attempts to reconstruct the geography of the Rhine provinces of the Roman Empire as shown on the PEUTINGER Table by comparing the latter with large scale maps of the region. J. K. W.

Rose, Herbert Jennings. Primitive culture in Italy. IX + 253 p. London, METHUEN, 1926. ISIS

Rostovtzeff, M. Iv. Les classes rurales et les classes citadines dans le haut empire romain. Mélanges HENRI PIRENNE, vol. II, p. 419-434, Bruxelles, 1926. ISIS

II. MIDDLE AGES.

6. — MIDDLE AGES

Generalities.

Aberg, Nils. The Anglo-Saxons in England during the early centuries after the invasion. VIII + 219 p. Uppsala, ALMQUIST, 1926. ISIS

Baas, Karl. Gesundheitspflege im Mittelalterlichen Basel. (*Zürcher Medizingeschichtliche Abhandlungen*, hrsg. von G. A. WEHRLI, Bd. 6). 120 S. Zurich, ORELL FÜSSLI, 1926. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Medizin*, 26, 77, 1927.

Bertolini, G. L. Dell' uso della parola « isola » per « penisola » nell' alto medioevo. *Rivista geografica italiana*, 34, p. 21-27, 1927. ISIS

Blondheim, D. S. Les parlers judéo-romans et la Vetus Latina. Etude sur les rapports entre les traductions bibliques en langue romane des Juifs au moyen âge et les anciennes versions. CXXXVIII + 247 p. Paris, CHAMPION, 1925. ISIS

Reviewed by H. v. SODEN, *Deutsche Literaturzeitung*, 2044-2047, 1926.

Boissonnade, Prosper. Life and work in medieval Europe (fifth to fifteenth centuries). Translated, with an introduction by EILEEN POWER. (*The History of Civilization Series*). XIX + 395 p., 8 pl. London, KEGAN PAUL, 1927. ISIS

Clark, James Midgley. The abbey of St. Gall as a centre of literature and art. VI + 322 p., illus. Cambridge, University Press, 1926. ISIS

Clarke, Maude Violet. The medieval city state; an essay on tyranny and federation in the later middle ages. 200 p. London, METHUEN, 1926. ISIS

Craigie, William A. The Icelandic Sagas. *Proceedings of the Royal Institution of Great Britain*. 24, Part 3 ,No. 119, p. 598-612, 1925. ISIS

The text of a popular lecture dealing with the sagas and with the light which they throw on geography, social life, folklore, religion, etc. J. K. W.

Crump, G. C. and **Jacob, E. F.** (*editors*). The legacy of the Middle Ages. XII + 549 p., 42 pl. Oxford, Clarendon Press, 1926. ISIS

Davies, Reginald Trevor. A sketch of the history of civilization in mediaeval England, 1066-1500. X + 336 p., illus. London, MACMILLAN, 1924. ISIS

Dill, Sir Samuel (1844-1924). Roman society in Gaul in the Merovingian age. XIII + 566 p. London, MACMILLAN, 1926. ISIS

Domel, Georg. Die Zünfte in Köln am Ausgang des Mittelalters unter besonderer Berücksichtigung der Weberzunft und Weberschlacht, 78 S., 30 Abb. Köln, CONSKI, 1923. ISIS

Espinas, Georges. La draperie dans la Flandre française au moyen âge. Tomes 1 et 2. 490 et 983 p. Paris, PICARD, 1923. ISIS

Goldschmidt, Adolph. Frühmittelalterliche illustrierte Enzyklopädien. Vorträge (1923-24) der Bibliothek Warburg, p. 215-226, 18 Abb. Leipzig, TEUBNER, 1926. ISIS

Grabmann, Martin. Mittelalterliches Geistesleben. Abhandlungen zur Geschichte der Scholastik und Mystik. 585 S. München, MAX HUEBER, 1926. ISIS

Halahan, Brenda C. Chiddingfold glass and its makers in the Middle Ages. *Transactions of the Newcomen Society*, 5, 77-85, London, 1926. ISIS

Halphen, Louis. Les Barbares, des grandes invasions aux conquêtes turques du XIe siècle. (Peuples et Civilisations, Histoire Générale). 393 p. Paris, ALCAN, 1926. ISIS

Reviewed by FREDERIC DUNCALF, *American Historical Review*, 32, 573-574, 1927.

Halphen, Louis. La conquête de la Méditerranée par les Européens au XI^e^ et au XII^e^ siècles. Mélanges HENRI PIRENNE, vol. I, p. 175-180, Bruxelles, 1926. ISIS

Haskins, Charles Homer. Studies in the history of mediaeval science. Second edition. xx + 412 p. Cambridge, Harvard University Press, 1927. ISIS

It gives me special pleasure to announce the publication of this new edition. The first, published in 1924, was reviewed in *Isis*, 7, 121-124, 1925. The second edition contains six pages of errara and addenda. G. S.

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Hobson, John Morrison. Some early and later Houses of Pity. XI + 199 p., 21 pl. London, ROUTLEDGE, 1926. ISIS

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G. S.

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G. S.

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III. ORIENTAL SCIENCE AND CIVILIZATION.

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EVARISTE RÉGIS HUC (Toulouse 1813 — Paris 1860), missionaire lazariste, entreprit en 1844, après avoir séjourné en Chine et en Mongolie, le voyage du Thibet avec son collègue le P. GABET. Le voyage épuisant dura à peu près deux ans, après quoi HUC rentra en France, et publia ses Souvenirs d'un voyage dans la Tartarie et le Thibet pendant les années 1844, 1846. Paris 2 vol. 1850; l'Empire chinois, 2 vol., 1855, qui lui fait suite, et le Christianisme en Chine, en Tartarie et au Thibet, 4 vol., 1857-58. De tous ces ouvrages, le premier, que l'on réédite, est le plus important. L. G.

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9. — INDIA.

(Âpastamba). Das Śrautasûtra des ÂPASTAMBA. Achtes bis fünfzehntes Buch... übersetzt von W. CALAND. (*Verhandelingen der Kon. Akademie van Wetenschappen te Amsterdam; Afdeeling Letterkunde*, nieuwe reeks, deel XXIV, No 2). 468 p. Amsterdam, Koninklijke Akademie, 1924. ISIS

Reviewed by L. D. BARNETT, *Journal of the Royal Asiatic Society*, 528-529, 1925.

Bhandarkar, Sir **Ramkrishna Gopal** (-1925). Sanskritist, Indianist. Obituary by F. W. THOMAS, *Journal of the Royal Asiatic Society*, 815-819, 1925. ISIS

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It is proper to deal with these two volumes in a single note, classified under India, because their main interest from our point of view is that they exhibit the reaction of a Hindu personality of great experience and wisdom to Western customs, European or American. They may teach us much about ourselves, and also indirectly about India. That the author, in spite of his ardent nationalism, is a courageous thinker will be sufficiently evidenced by the following quotation (1927, p. 11) : « I had nourished the thought that in spite of cultural backwardness, the Asiatic people have not been lacking the refining influence of religion, and they have learnt to live a life of simplicity with high thinking which has been the Hindu ideal. But notwithstanding the vague claims of spiritual superiority by the Asiatics they are crude materialists, and there is more humanity, kindness, probity of character, refinement of manner, social service, consideration for feeling for others and simple-living with high thinking in Europe than can be found anywhere in Asia. »

G. S.

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Edgerton, Franklin. The Panchatantra reconstructed. Vol. I. Text and critical apparatus. Vol. II. Introduction and translation. XIX + 408 and 405 p. New Haven, Connecticut, American Oriental Society, 1924. ISIS

Reviewed by R. P. DEWHURST, *Journal of the Royal Asiatic Society*, 326, 1925.

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Elaborate review by VICTOR GOLOUBEW, *Bull. de l'École fr. d'Extrême-Orient*, 23, 438-454, 1923.

Gait, Sir Edward (Albert). A history of Assam. 2n ed., revised. map and plates. Calcutta, THACKER, 1926. ISIS

First edition, Calcutta, 1906.

Goblet d'Alviella, Comte (1846-1925). Ce que l'Inde doit à la Grèce. Des influences classiques dans la civilisation de l'Inde. Nouvelle édition. 153 p. ,21 fig. Paris, PAUL GEUTHNER, 1926. (8 frs. suisses). ISIS

Il y a quelque audace à réimprimer ainsi sans modification une série de lectures faites il y a trente ans. La note de l'éditeur le reconnait du reste, mais cela ne suffit pas à désarmer la critique. Ce qui est plus grave c'est que la documentation de l'auteur sur certaines questions techniques (médecine, mathématiques, astronomie) était déjà à peine suffisante en 1897, et les progrès accomplis depuis lors dans presque toutes les directions ont été immenses. Le livre intéressera le lecteur dans la mesure où il s'intéresse à l'auteur. G. S.

Kaye, G. R. Astronomical instruments in the Delhi Museum. *Memoirs of the Archaeological Survey of India*, 1921, no. 12. ISIS

King, Sir Lucas White (1856-1925). Orientalist. Obituary by WOLSELEY HAIG, *Journal of the Royal Asiatic Society*, 813-814, 1925. ISIS

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Information derived from the Buddhist Jâtakas. G. S.

Lüders, Heinrich. Medizinische Sanskrittexte aus Turkistan. Aus Indiens Kultur. RICHARD VON GARBE Festgabe, S. 148-162, Erlangen, PALM und ENKE, 1927. ISIS

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« Other nations have known or still practise this form of animal worship.

But it would be difficult to quote another instance in which it takes such a prominent place in literature, folklore, and art, as it does in India. Nor would it be possible to name another country where the development of this cult can be studied during a period which may be estimated at no less than three millennia. During so vast a space of time the deified serpents have haunted the imagination of the people of Hind. But even more astonishing is the endless variety of aspect under which the Nâgas appear in Indian literature and art. We meet, on the one hand, with the primitive type of the reptile endowed with the magic properties which we are wont to associate with the dragon of Western fable. On the other hand, the Nâga frequently has the character of a water-spirit. Again, he may be able to assume any form he chooses, and commonly appears in human shape. In Brahmanical legend he may become a pious ascetic, in Buddhist lore he may even develop into a self-denying saint. Very often these various types appear strangely blended.

In the present volume it has been my object to collect the legends relating to the Nâgas which are found in the Brahmanical and Buddhist literature of India. We do not pretend that in that gigantic body of literary tradition there may not be a Nâga story which has escaped our notice. The three chief repositories of serpent-lore — the Mahâbhârata, the Jâtaka Book, and the Râjataranginî — have, at least, been fully utilized. But for the rest it is questionable whether much would have been gained by aiming at completeness. The stories here presented will certainly suffice to show the Nâgas in that great variety of aspect to which reference has been made. »

The author is professor of Sanskrit and Indian Archaeology in the University of Leyden, Late Superintendent, Archaeological Survey of India. Very elaborate index and admirable illustrations. G. S.

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10. — CHINA.

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Obituary notice. « Avant tout, LÉOPOLD DE SAUSSURE a été un sinologue et, par le fait de ses connaissances mathématiques, de ses nombreuses lectures, de son goût pour l'histoire des sciences et des peuples, il a étudié avec fruit

l'astronomie chinoise dont il a renouvelé la connaissance. » DE SAUSSURE believed in « l'identité complète (dans les détails comme dans les traits généraux) de la cosmologie astronomique iranienne avec celle de la Chine. » J. K. W.

Groot, J. J. M. de (1854-1921). Chinesische Urkunden zur Geschichte Asiens. Bd. II. Die Westlande Chinas in der vorchristlichen Zeit, in vollständiger Zusammenfassung übersetzt und erläutert. Hrsg. von OTTO FRANKE. 233 S. Berlin, WALTER DE GRUYTER, 1926. ISIS

Reviewed by BERNHARD KARLGREN, *Deutsche Literaturzeitung*, 661-665, 1927.

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Reviewed by O. FRANKE, *Der Islam*, 12, 255-256, 1922.

Hedin, Sven. Ts'ung-ling. *Ymer*, 45. Arg., p. 266-278, 1925. ISIS

On Chinese knowledge of Ts'ung-ling (or Transhymalaya) from the second century B. C. to the nineteenth century after Christ. J. K. W

(Huang Chüan-sheng). Won Kenn (Hwang Kyuan-cheng), Origine et évolution de l'écriture hiéroglyphique et de l'écriture chinoise. Études et documents publiés par l'Institut franco-chinois de Lyon. Lyon et Paris, 96 p., 1926. ISIS

The author of this treatise, HUANG CHÜAN-SHENG (according to the English spelling), is a docteur ès lettres of the University of Lyons. He devotes one chapter to the principles of Egyptian script, studies the formation and development of Chinese writing in chapter II, and compares the two systems in chapter III. The exposition of Chinese characters in general is correct, but contains nothing that is new; unfortunately, however, the characters on the ancient divination bones, the earliest form of Chinese script now at our disposal, as well as their studies by European and American scholars are entirely disregarded, and for this reason the author jumps at generalizations such as « that Chinese writing is far less advanced in its development than Egyptian and the pictorial signs are devoid of the fidelity and precision of the hieroglyphs. » A few formative principles which the two systems of writing have in common are pointed out, but the historical independence of the two is assumed. This we knew before and have never doubted, and it was hardly necessary to prove it again in a lengthy thesis. We regret that a Chinese wastes his energy on so barren a subject, and hope that he will soon utilize his knowledge to better advantage by making Chinese sources accessible to our science.

B. LAUFER.

Hübotter, Franz. Zwei berühmte chinesische Ärzte des Altertums CHOUEN YU-J und HOA T'OUO. 2. Auflage. (*Mitteilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens*, Bd. 21, Teil A.) 48 p. Tokyo, 1927. ISIS

For a former study on Chinese medicine by the same author (Kumamoto 1924) see *Isis*, 7, 259. The present paper may be considered a continuation of the one published by him in the *Archiv für Geschichte der Medizin in* 1912 (7, 115-128) which contained a translation of the biography of the semi-mythical Chinese physician PIEN CH'IAO (Vth cent B. C. ?, see my *Introduction*, I, 102). That biography was then translated for the first time from the Shih-ch of SSŪ-MA CH'IEN, chapter 105 (CHAVANNES's translation stops at ch. 47). The first of the two biographies included in the new paper is derived from the same source. It is the biography of SHUN YŪ-I, born c. 216 B. C. (see my *Introduction*, I, 187). The author makes an extraordinary blunder in his reference to GALEN (p. 4), as if GALEN had been flourishing in the IId century B. C. ! The second biography is that of the great surgeon HUA T'O (first half IIIrd cent., see *Introduction*, I, 325), translated from part 920 of the great encyclopædia Ku-chin t'u-shu chi-chêng. The principal interest of these biographies consists in the many clinical histories which they contain. HUA T'O may be considered the founder or the scientific organizer of a kind of home gymnastics and of respiration exercises which are still very popular in the East. G. S.

Karlgren, Bernhard. Dictionary of Chinese dialects. (Études sur la phonologie chinoise, livr. 4, fin; *Archives d'Etudes orientales*, vol. 15,4). p. 701-898. Gotenburg, ELANDERS Boktryckeri, 1926. ISIS

Reviewed by WALTER SIMON, *Deutsche Literaturzeitung*, 258-260, 1927. See *Isis*, 6, 193; 7, 567.

Legendre, Aimé François. La civilisation chinoise moderne. (*Collection d'études, de documents et de témoignages pour servir à l'histoire de notre temps*). III + 298 p., plates. Paris, PAYOT, 1926. ISIS

Liu Chai-Lien. The Arabian prophet. A life of MOHAMMAD from Chinese and Arabic sources. A Chinese-Moslem work translated by ISAAC MASON. With appendices on Chinese Mohammadanism. Foreword by S. M. ZWEMER. XVII + 313 p., 20 ill. Shanghai, 1921. ISIS

Reviewed by J. HOROVITZ, *Der Islam*, 13, 121, 1923.

Maspero, Henri. Légendes mythologiques dans le Chou King. *Journal Asiatique*, 204, 1-100, 1924. ISIS

« Les érudits chinois n'ont jamais connu qu'une seule méthode d'interprétation des récits légendaires, la méthode évhéméristе. Sous le prétexte d'en retrouver le noyau historique, ils éliminent les éléments merveilleux qui leur paraissent invraisemblables, et ne conservent plus qu'un résidu incolore, où les dieux et les héros sont transformés en saints empereurs et en sages ministres, et les monstres en rebelles ou en mauvais ministres; et ce sont ces élucubrations qui, mises bout à bout suivant un ordre que diverses théories métaphysiques, surtout celle des cinq éléments, imposaient à la chronologie, constituent ce qu'on appelle l'histoire des origines chinoises. Cela n'a de l'histoire que le nom : en réalité, il n'y a que des légendes, tantôt d'origine mythologique, tantôt venant des temples ancestraux des grandes familles,

tantôt émanant des centres religieux locaux, tantôt récits d'origine en partie au moins savante, élaborés pour expliquer un rite, tantôt simples contes empruntés au folk-lore, etc. Tous ces fantômes doivent disparaître de l'histoire de Chine, dont ils encombrent les débuts; au lieu de s'obstiner à rechercher sous la forme légendaire un fond historique inexistant, il faut chercher au contraire à retrouver le fond mythologique ou le conte populaire sous le récit pseudo-historique. »

Maybon, Charles (1872-1926). Biography and bibliography by P. PELLIOT, *T'oung Pao*, 24, 300-302, 1926. ISIS

Moule, A. C. Some foreign birds and beasts in Chinese books. *Journal of the Royal Asiatic Soc.*, 247-261, 3 pl., 1925. ISIS

« The following pages bring together passages from Chinese books, some of which have been translated before in a different context, illustrating them by reproductions of wood-cuts which are unfamiliar and of great interest. »

Muccioli, Marcello. L'arsenico presso i Cinesi. *Archivio di Storia della Scienza*, 8, 65-76, 1927. ISIS

The author has extracted from the *Pên ts'ao kang mu* what is known to the Chinese about arsenic, realgar, and orpiment, their properties and employment in criminology, therapeutics, agriculture, and industries, and accompanies this information with interesting comments. Unfortunately he has overlooked the fact that he has had predecessors in the study of this subject, notably GEERTS, F. DE MÉLY (Les lapidaires chinois), and HANBURY (Science Papers). DE MÉLY, aside from arsenic, has also treated fully of the mineral *yü shi*, which remains a puzzle to the author of the above article. There is no reason for questioning, as he does (p. 74), the fact that the Chinese made vessels of realgar. They have been described by HANBURY with a good illustration of a realgar medicine-cup. One of these was brought to Paris as early as 1684 by an embassy from Siam, and was chemically examined by HOMBERG.

B. LAUFER.

Partington, J. R. Chinese alchemy. *Nature*, 119, 11, 1927. ISIS

Pelliot, Paul. Les traditions manichéennes au Fou-Kien. *T'oung Pao*, 22, 193-208, 1923. ISIS

Pelliot, Paul. Notes sur l'histoire de la céramique chinoise. *T'oung Pao*, 22, 1-54, 1923. ISIS

Pelliot, Paul. Manuscrits chinois au Japon. *T'oung Pao*, 23, 15-30, 1924. ISIS

Pelliot, Paul. Note sur Karakorum. *Journal Asiatique*, 206, 372-375, 1925. ISIS

Pelliot, Paul. Quelques remarques sur le Chouo Fou. *T'oung Pao*, 23, 163-220, 1924. ISIS

Notes on the Ming (or Yüan?) anthology entitled Chouo fou G. S.

Rüdenberg, Werner. Chinesisch-Deutsches Wörterbuch, 6400 Schriftzeichen mit ihren Einzelbedeutungen und den gebräuchlichsten Zusammensetzungen. IX + 687 p. Hamburg, L. FRIEDERICHSEN, 1924. ISIS

Reviewed by P. PELLIOT, *T'oung Pao*, 24, 271-282, 1926.

Saussure, Léopold de (1866-1925). Biography and bibliography by P. PELLIOT, *T'oung Pao*, 24, 296-300, 1926. ISIS

Saussure, Léopold de. Sur l'inanité de la chronologie chinoise officielle. *Journal Asiatique*, 203, 360-362, 1923. ISIS

« La chronologie de SSEU-MA TS'IEN et des Annales sur bambou a pour elle la tradition. Si elle n'est pas certaine, elle a du moins sa raison d'être. Celle du T'ong kien kang mou, purement imaginaire, ne doit plus être prise en considération par la sinologie. »

Saussure, Léopold de. Le système cosmologique sino-iranien. *Journa Asiatique*, 202, 235-297, 1923. ISIS

« La seule conclusion à tirer de cet exposé,... est la constation d'un système astronomique et cosmologique, dont la diffusion à travers l'Asie semble être en connexion avec celle du zodiaque lunaire. Ce système se présente dans la littérature chinoise, ancienne et moderne, sous une forme bien définie, rationelle et symétrique. Mais des considérations d'ordre chronologique, corroborées par certains indices, pourraient suggérer d'en chercher l'origine dans la haute antiquité babylonienne, alors même que l'assyriologie ne fournirait actuellement pas de renseignements positifs à ce sujet. Par suite du caractère savant de cette cosmologie et de ce zodiaque lunaire, on ne voit guère que deux alternatives : si l'origine babylonienne devait être écartée, il en faudra revenir à l'hypothèse de l'origine chinoise. »

Sirén, Osvald. The imperial palaces of Peking; two hundred and seventy four plates in collotype, after photographs by the author, twelve architectural drawings and two maps, with a short historical account. Three volumes. Paris, G. VAN OEST, 1926. ISIS

Sirén, Osvald. The walls and gates of Peking. XIX + 239 p., 53 text fig., 1 plan of Peking and 128 plates. London, JOHN LANE, The Bodley Head Limited, 1924. ISIS

Reviewed by P. PELLIOT, *T'oung Pao*, 24, 76-79, 1925.

Stein, Sir Aurel. Central-Asian relics of China's ancient silk trade. *T'oung Pao*, 20, 130-141, 1920. ISIS

Contains valuable information on early Chinese metrology. G. S.

Swingle, Walter T. Chinese and other East Asiatic books added to the

Library of Congress, 1925-26. Report of the Librarian of Congress for the year 1925-26, p. 313-334, Washington, D. C., 1926. ISIS

Many long notes have already been devoted in *Isis* to the Chinese collections of the Library of Congress; for the last one see *Isis*, 8,791. The large collection of official gazetteers and of *ts'ung shu* has still been increased. Among the latter I would mention an important medical one, the *Shih ts'ai san shu* published by YU CHÊNG in 1667; it contains a rare herbal, the *Pên ts'ao t'ung hsüan* by LI CHUNG-TZU. Dr. PERCY T. WATSON's collection of medical works (78 work and 23 scrolls) has been acquired. Thus was the series of Chinese herbals materially strengthened. To show the importance of Chinese materia medica it will suffice to quote their immemorial use of Chaulmoogra oil and of Ma huang (Ephedra sp.), whose effect is similar to that of adrenalin. Perhaps the most interesting of these new herbals is the *Pên ts'ao hui* by KUO P'EI-LAN (or CHANG-I) published in 1666 in 18 illustrated books, with a preface by LI CHUNG-TZU, dated 1665. Outside of the *Pên ts'ao t'ung hsüan* quoted above (343 drugs, the article on Ma huang is here translated), there is another one by the same author contained in the *I tsung pi tu*, published in 1637. There are also a number of works on smallpox, notably the *Tou chên hsin fa* by WAN CH'ÜAN (or MI-CHAI). The Library was fortunate in securing a copy of a Sung encyclopædia of botany, the *Ch'üan fang pei tzu*, by CH'ÊN CHING I, revised and edited by CHU MU (1256); extracts of the preface are here translated.

' The outstanding item of interest in the Japanese acquisitions is the *Kochu-hen* by TADASUKE TAKADA, in six parts, consisting of 127 books bound in 68 volumes, Chinese style, inclosed in 13 portfolios. It is a monumental lexicographic work on the old Chinese characters such as are found on ancient inscriptions, on bronze vessels, etc. The so-called seal characters and several other ancient forms of characters are treated very fully, and there are two comprehensive indexes to assist in finding these archaic forms of Chinese writing. The last part of the work in six books bound in six volumes treats of the archaeological material used in the study of ancient Chinese writing and is beautifully illustrated with 21 photogravure plates. This work unlike the vast majority of modern Japanese books seems to be written entirely in Chinese and does not even have the colophon at the end of the last volume giving the publisher, date, and place of publication that is almost invariably present in Japanese books. Perhaps because of these unusual features, the work has already been cited as a Chinese work with the title rendered *Ku Chou pien*, the author's name would be read KAO-TIEN CHUNG-CHOU. » G. S.

Taranzano, Charles (S. J.). Vocabulaire des sciences mathématiques, physiques et naturelles. II. Vocabulaire chinois-français. 964 p. Sien-hsien, 1921. ISIS

« Le Vocabulaire français-chinois des sciences mathématiques, physiques, et naturelles du P. TARANZANO avait paru en 1914. » Reviewed by P. PELLIOT, *T'oung Pao*, 23, 40-41, 1924.

Taylor, Louise Marion. Catalog of books on China in the Essex Institute. (Salem, Mass). IX + 392 p. Salem, 1926. ISIS

Van Hée, Louis (S. J.). Le grand thesaurus des mathématiques chinoises et européennes. *Arch. di storia d. scienza*, 7, 18-24, 1926. ISIS

Compte-rendu de ce « choix des meilleurs ouvrages publiés en Chine, sur les mathématiques, d'après les méthodes chinoise et européenne », édité en 1889 par TCH'EN WEI-KI, et qui comprend cent fascicules (la traduction d'EUCLIDE comprend 16 fasc.) L. G.

Van Hée, Louis (S. J.). The great treasure house of Chinese and European mathematics. *American Mathematical Monthly*, 33, 502-506, 1926. ISIS

« The recent appearance in this *Monthly* of several interesting and valuable articles upon early Chinese mathematics suggests the desirability of calling attention to a notable source book that appeared in China in 1889 but which seems to be little recognized in the west. It is known as « The Great Treasure House of Chinese and European Mathematics. » and was edited by CH'EN WEI-KI. It consists of a selection from some of the best mathematical treatises published in China, both native and European, and is made up of a hundred parts, some of these being classical treatises and others being mere compilations. The following list with comments, affords an idea of the scope of this monumental compendium : »

Wagner, Wilhelm. Die chinesische Landwirtschaft. XV + 668 p., illus., maps, plans, and diagrams. Berlin, PAUL PAREY, 1926. ISIS

Ward, John Sebastian Marlow. The Hung society : or the Society of Heaven and Earth. In three volumes. Vol. II; VIII + 196 p. London Baskerville Press, 1927. (Vol. I, 1925). ISIS

Yetts, W. Perceval. Public health in ancient China. *Journal of the Royal Asiatic Soc.*, 98-100, 1924. ISIS

Zenker, Ernest Victor. Geschichte der chinesischen Philosophie : zum ersten Male aus den Quellen dargestellt. Bd. I. Das klassische Zeitalter bis zur Han-Dynastie (206 v. Chr.) XI + 346 p. Reichenberg, GEBR. STIEPEL, 1926. ISIS

Unfavorably reviewed by ALFRED FORKE, *Deutsche Literaturzeitung*, 2416-2418, 1926.

11. — JAPAN.

Kuwaki, Ayao. Physical sciences in Japan from the time of the first contact with the Occident until the time of Meiji Restoration. 8 p. (no place or date; received in Jan. 1927). ISIS

Summary of the history of physical sciences in Japan from 1543 to 1868. G. S.

Maitre, Claude Eugène (1876-1925). Biography by P. PELLIOT, *T'oung Pao*, 24, 294-295, 1926. ISIS

Nozoe, T. La pharmacie au Japon. *Journal de pharm. et de chimie*, Tokio, 8e S., t. 3, 41-46, 90-94, 1926. ISIS

L'auteur fait l'historique de cet art introduit au Japon par des Chinois vers 554, mais il montre que c'est seulement après le rétablissement de la puissance impériale en 1867 que l'éducation européenne, en gagnant du terrain introduisit la notion de pharmacie régulière dans l'organisation japonaise. Organisation générale. Etudes conduisant à la profession. Pharmacopée. Journaux. Revues. L. L.

Peri, Noël (1865-1922). Orientalist. Biography (with portrait) by CL. E. MAITRE. *Bull. de l'École fr. d'Extrême Orient*, 22, 404-417, 1922. ISIS

12. — ISRAEL.

Bertholet, Alfred. A history of Hebrew civilization. Translated by the Rev. A. K. DALLAS. 400 p. London, GEORG G. HARRAP, 1926. ISIS

German edition, Göttingen 1919.

Clay, Albert T. (1866-1925). The origin of biblical traditions. 224 p. Yale and Oxford University Press, 1923. ISIS

Reviewed by A. H. SAYCE, *Journal of the Royal Asiatic Society*, 111-116, 1924.

Goldberg, Oskar. Die Wirklichkeit der Hebräer. Einleitung in das System des Pentateuch. Erster Band (Deutscher Text zur hebräischen Ausgabe). VIII + 300 S. Berlin, DAVID, 1925. ISIS

Hirschfeld, Hartwig. Literary history of Hebrew grammarians and lexicographers. London, Jews' College Pub., 1926. ISIS

Jean, Charles François. Le milieu biblique avant Jésus-Christ. II. La littérature. XXX + 617 p. Paris, GEUTHNER, 1923. ISIS

Kittel, Rudolf. Geschichte des Volkes Israel. 6te Auflage. Stuttgart-Gotha, PERTHES, 1923-25. ISIS

Löw, Immanuel. Die Flora der Juden. I, 1. Hälfte. XII + 448 S. Wien, R. LÖWIT, 1926. ISIS

Other parts of the same work were reviewed in *Isis*, 6, 428; 8, 210, by JULIUS RUSKA.

Mieses, Matthias. Der Ursprung des Judenhasses. X + 582 S. Berlin, 1923. (Hannover, H. LAFAIRE). ISIS

Montet, Edouard. Histoire du peuple d'Israël depuis les origines jusqu'à l'an 70 après J. C. 208 p., 25 ill. Paris, PAYOT, 1926. ISIS

Tableau général de l'histoire politique, de l'histoire religieuse, et de la civilisation du peuple d'Israël jusqu'à sa ruine définitive en tant que nation vivant sur son territoire. La période des origines (jusqu'au XI[e] S.) est un peu plus développée que les autres (elle tient plus du quart de l'ouvrage) mais cette disproportion se justifie en raison de l'importance et de la difficulté des problèmes soulevés. L. G.

Münz, Isak. Die jüdischen Ärzte im Mittelalter. Ein Beitrag zur Kulturgeschichte des Mittelalters. 175 S. Frankfurt a. M., KAUFFMANN, 1922. ISIS

Newman, H. (*editor*). The real Jew : some aspects of the Jewish contribution to civilization. With a prefatory note by the Very Rev. the Chief Rabbi and an introduction by ISRAEL ZANGWILL. XXIV + 291 p. London, BLACK, 1925. ISIS

Newman, Louis Israel. Jewish influence on Christian reform movements. (*Columbia University Oriental Studies*, vol. 23). XXVII + 706 p. New York, LONGMANS, GREEN, 1925. ISIS

Reviewed by GEORGE F. MOORE, *American Historical Review*, 32, 100-102, 1926.

Pedersen, Johannes. Israel : its life and culture. English translation from the Danish. X + 578 p. London, MILFORD, 1926. ISIS

Rosenbach, Abraham S. Wolf. An American Jewish bibliography, being a list of books and pamphlets by Jews or relating to them, printed in the United States from the establishment of the press in the Colonies until 1850. (*Publications of the American Jewish Historical Society*, n. 30). XVII + 500 p. Baltimore, Md., The Society, 1926. ISIS

Reviewed in *American Historical Rseview*, 32, 657, 1927.

Wolfson, Harry Austryn. Additional notes to the article on the Classification of sciences in mediaeval Jewish philosophy published in the Hebrew Union College Jubilee Volume, p. 263-315. *Hebrew Union College Annual*, 3, 371-375, 1926. ISIS

For the original paper see *Isis*, 8, 793.

13. — IRAN.

Browne, Edward Granville (1862-1926). A year among the Persians : impressions as to the life, character and thought of the people of Persia, received during twelve months' residence in that country in

the years 1887-1888. With a memoire by Sir E. DENISON ROSS. New edition, XXIII + 650 p., frontispiece and map. Cambridge, University Press, 1926. ISIS

First published in 1893.

Casartelli, Louis Charles, R. C. Bishop of Salford (-1925). Student of Iranian religion and archaeology. Obituary by E. EDWARDS, *Journal of the Royal Asiatic Society*, 380-381, 1925. ISIS

Cavaignac, E. Note sur l'origine du calendrier Zoroastrien. *Journal Asiatique*, 202, 106-110, 1923. ISIS

Christensen, Arthur. Om laegekunst hos Perserne (*Medicinskhistoriske Smaaskrifter ved* VILHELM MAAR, 18). 103 p. Copenhagen, VILHELM TRYDE, 1927. ISIS

Reviewed by H. RITTER, *Der Islam*, 12, 252-253, 1922.

Dhalla, Maneckji Nusservanji. Zoroastrian civilisation from the earliest times to the down fall of the last Zoroastrian empire 651 A. D. XXVIII + 395 p. New York, Oxford University Press, 1922. ISIS

Reviewed by A. MEILLET, *Journal Asiatique*, 203, 173-174, 1923.

Modi, Jivanji Jamshedji, Shams-ul-'Ulamâ. Memorial papers. XV + 165 p. Bombay, Fort Printing Press, 1922. ISIS

Reviewed by R. P. DEWHURST, *Journal of the Royal Asiatic Society*, 331, 1925.

Modi, Jivanji Jamshedji. The religious ceremonies and customs of the Parsees. 211 + 484 p., 4 plans. Bombay, British India Pres, Mazagaon, 1922. ISIS

Reviewed by R. P. DEWHURST, *Journal of the Royal Asiatic Society* 677-678, 1924.

Pavry, Jal Dastur Cursetji. The Zoroastrian doctrine of a future life; from death to the individual judgment. (*Columbia University Indo-Iranian Series*. Edited by A. V. WILLIAMS JACKSON. Vol. 11). XXVIII + 119 p., New York, Columbia University Press, 1926. ISIS

Schmidt, Valdemar. Les essais de déchiffrement du Perse cunéiforme en Suède, en 1822, et la découverte faite aux Indes par le Danois KRISTIAN RASK (1787-1832). *Journal Asiatique*, 202, 98-105, 1923 ISIS

14. — ISLAM.

Ahrens, W. Nochmals die « magischen Quadrate ». *Der Islam*, 14, 104-110, 1925. ISIS

'Alî Bey Bahjat (1858-1924). Director of the Arabic Museum (Dâr al-âthâr al-'arabiyya) in Cairo. Obituary by **Max Meyerhof**. *Der Islam*, 14, 378, 1925. ISIS

'Alî Bey Bahjat et Gabriel, Albert. Fouilles d'al-Fousṭâṭ. Publiées sous les auspices du Comité de conservation des monuments de l'art arabe. X + 128 p., 65 fig. dans le texte, 32 planches. Paris, E. de Boccard, 1921. ISIS

Reviewed by G. Wiet, *Journal Asiatique*, 203, 337-339, 1923.

Ali Emiri Efendi (1857-1924). Historien turc. Biographie et bibliographie par J. Deny, *Journal Asiatique*, 204, 375-379, 1924. ISIS

Basset, René (1855-1924). Arabist. Obituaries by **Gabriel Ferrand**, *Journal Asiatique*, 204, 137-141, 1924, and by F. **Krenkow**, *Journal of the Royal Asiatic Soc.*, 334-335, 1924. ISIS

Bell, Richard. The origin of Islam in its Christian environment; the Gunning lectures, Edinburgh University, 1925. VII + 224 p. London, Macmillan, 1926. ISIS

Berchem, Max van (1863-1921). Biography by **Ernst Herzfeld**. *Der Islam*, 12, 206-213, 1922. ISIS

Bergsträsser, Gotthelf. Zu den magischen Quadraten. *Der Islam*, 13, 227-235, 1923. ISIS

Bergsträsser, Gotthelf. Anfänge und Charakter des juristischen Denkens im Islam. Vorläufige Betrachtungen. *Der Islam*, 14, 76-81, 1925. ISIS

Briggs, Martin S. Muhammedan architecture in Egypt and Palestine. XVI + 255 p., 252 fig. Oxford, Clarendon Press, 1924. ISIS

Reviewed by G. Wiet, *Journal Asiatique*, 206, 363-366, 1925.

Brown, John Porter. The dervishes : or oriental spiritualism. Edited with introduction and notes by H. A. Rose. XXIII + 496 p. London, Oxford, University Press, 1927 (first edition, 1868). ISIS

Carra de Vaux. Les penseurs de l'Islam. Vol. III : L'exégèse, la tradition et la jurisprudence. 423 p. Vol. IV. La scolastique, la théo-

logie et la mystique. La musique 384 p. Vol. V. Les sectes. Le libéralisme moderne. 431 p. Paris, GEUTHNER, 1923-1926. ISIS

Die beide ersten Bände dieses wichtigen Werkes sind entsprechend ihrem der Philosophie, der Mathematik und den Naturwissenschaften gewidmeten Inhalt in Vol. V von *Isis* (S. 165-167) ausführlich besprochen. Der Inhalt der drei das Gesamtwerk abschliessenden Bände berührt das Interessengebiet dieser Zeitschrift wenigstens teilweise noch im vierten Bände, der von der Theologie und Mystik handelt, die ja als Weltauffassungen im Orient wie im Mittelalter von Philosophie und Naturbetrachtung oft nicht zu trennen sind. Aber auch auf den übrigen Gebieten werden die geistvollen Ausführungen des Verfassers, der den vom Islam hervorgebrachten geistigen Strömungen bis zur Gegenwart folgt, für jeden wertvoll sein, der von der Gedankenwelt vor unsern Toren ein auf besten Quellen beruhendes Bild gewinnen will. JULIUS RUSKA.

Casanova, P. Dénéraux en verre arabe. Mélanges offerts à GUSTAVE SCHLUMBERGER, 296-300, Paris, GEUTHNER, 1924. ISIS

Cheesman, Major R. E. In unknown Arabia. With a foreword by Sir PERCY Z. COX. XX + 447 p., 32 pl. London, MACMILLAN, 1926. ISIS

Corpus Papyrorum Raineri Archiducis Austriae. III. Series Arabica. Edidit ADOLF GROHMANN. T. I. Pars 1-3. IX + 108, CII + 311 p., 36 pl. Wien, F. ZELLER, 1926. ISIS

Reviewed by M. SOBERNHEIM, *Deutsche Literaturzeitung*, 256-258, 1927.

Creswell, (Captain) Keppel Archibald Cameron. A brief chronology of the Muhammedan monuments of Egypt to A. D. 1517. *Bul. de l'Institut fr. d'Archéol. Orientale*, 16. 163 p. 18 pl. Cairo, 1919. ISIS

Reviewed by E. HERZFELD, *Der Islam* 12, 246-248, 1922.

Fagnan, E. Extraits inédits relatifs au Maghreb (géographie et histoire). Traduits de l'Arabe et annotés. 494 p. Alger, CARBONEL, 1924. ISIS

The texts translated in this volume date from the eight to the seventeenth centuries of our era. The geographical parts cover not only western Africa but the Mediterranean shores and Spain. J. K. W.

Ferrand, Gabriel. L'élément persan dans les textes nautiques arabes des XV^e^ et XVI^e^ siècles. *Journal Asiatique*, 204, 193-257, 1924; 205, 351, 1924. ISIS

Gairdner, W. H. T. The phonetics of Arabic. A phonetic inquiry and practical manual for the pronunciation of classical Arabic and

of one colloquial (the Egyptian). (The American University at Cairo, Oriental Studies). 107 p., figs. London, MILFORD, 1926. ISIS

This is a very important work, if small in bulk, to be studied by every scholar, wishing to pronounce Arabic correctly. Of course to make full use of it he should enlist the cooperation of a sheikh, but he would need the book and the sheikh equally. Both are necessary, neither is sufficient. G. S.

Goldziher, Ignaz (1850-1921). Obituary by C. H. BECKER. *Der Islam*, 12, 214-222, 1922. ISIS

Goossens, Eduard. Ursprung und Bedeutung der koranischen Siglen. *Der Islam*, 13, 191-226, 1923. ISIS

Guillaume, Alfred. Some remarks on free will and predestination in Islam, together with a translation of the Kitabu-l Qadar from the Sahih of AL-BUKHARI. *Journal of the Royal Asiatic Society*, 43-63, 1924. ISIS

« My aim is to show how the Muhammadan dogma of Determinism, despite the revolt of the most vigorous thinkers of the early Muslim church, was developed and consolidated; to indicate in more detail than earlier writers how dependent that reaction was on Byzantine Christianity; and how completely *'aql* has been put to flight by *naql* in the traditions universally accepted as authentic. »

Guillaume, Alfred. The traditions of Islam, an introduction to the study of the hadith literature. 184 p. Oxford, Clarendon Press, 1924. ISIS

Reviewed by R. A. NICHOLSON, *Journal of the Royal Asiatic Society*. 545-547, 1925.

Hariz, Joseph. La part de la médecine arabe dans l'évolution de la médecine française. 164 p. Paris, GEUTHNER, 1922. ISIS

Heffening, Willi. Das islamische Fremdenrecht bis zu den islamisch-fränkischen Staatsverträgen. Eine rechtshistorische Studie zum Fiqh. (*Beiträge zum Rechts- und Wirtschaftsleben des islamischen Orients*, hrsg. von WILLI HEFFENING, Bd. I.) XX + 220 S. (41 of Arabic text). Hannover, HEINZ LAFAIRE, 1925. ISIS

Reviewed by TH. W. JUYNBOLL, *Deutsche Literaturzeitung*, 1939-1942, 1926, and by G. BERGSTRÄSSER, *Der Islam*, 15, 311-321, 1926.

Hein, Joachim. Bogenhandwerk und Bogensport bei den Osmanen nach dem « Auszug der Abhandlungen der Bogenschützen » (telkhîṣ resâil er-rümât) des MUṢṬAFÂ KÂNÎ (c. 1836). Ein Beitrag zur Kenntnis des türkischen Handwerkes und Vereinswesens. *Der Islam*, 14, 289-360, 19 Abb., 1925; 15, 1-78, 233-294, 1926. ISIS

Hell, Joseph. Von MOHAMMED bis GHAZÂLI. Quellentexte aus dem Arabischen übersetzt und eingeleitet. (Religiöse Stimmen der Völker, hrsg. v. Walter Otto) 2. Aufl. Jena, DIEDERICHS, 1923. ISIS

Reviewed by H. RITTER, *Der Islam*, 14, 142-147, 1925.

Hell, Joseph. The Arab civilisation. Translated from the German by S. KHUDA BUKHSH. XVII + 128 p. Cambridge, HEFFER, 1926. ISIS

Juynboll, Theodor Willem. Handleiding tot de kennis van de Mohammedaansche wet volgens de leer der Sjâfi'itische school. Derde Druk XV + 430 p. Leiden, E. J. BRILL, 1925. ISIS

Reviewed by R. STROTHMANN, *Der Islam*, 15, 310-311, 1926.

Kern, Friedrich (1875-1921). Obituary by EUGEN MITTWOCH, *Der Islam*, 14, 88-91, 1925. ISIS

Lammens, Henri (S. J.). L'Islam. Croyances et institutions. 288 p. Imprimerie catholique, Beyrouth, 1926. ISIS

Isis a déjà signalé des travaux du P. LAMMENS (voir t. 2, 434; 3, 454; et aussi 4, 618). Je donne seulement la table des matières de ce manuel de vulgarisation sur les croyances et les institutions de l'Islam : le berceau de l'Islam, l'Arabie préislamique (pp. 5-28), MAHOMET (29-42), le Qoran (43-73), la Sonna (74-91), la jurisprudence et la loi de l'Islam (92-122), ascétique et mystique de l'Islam (123-153), les sectes (154-195), réformateurs et modernistes (196-245). 26 pp. de bibliographie; index alphabétique. L. G.

Margoliouth, D. S. The origins of Arabic poetry. *Journal of the Royal Asiatic Society*, 417-449, 1925. ISIS

« If on the question whether Arabic versification goes back to immemorial antiquity or is later than the Qur'an it seems wisest to suspend judgment, the reason lies in the bewildering character of the evidence that is before us. We are on safe ground when we are dealing with inscriptions; and the Qur'an can be trusted for the condition of the Arabs to whom it was communicated in the Prophets's time. But for the history of Arabic verse we have to go to other authorities, who for the most part treat of times and conditions of which they themselves had no experience, and whose training had caused them to assume much that necessarily misled them. In judging their statements we can carry scepticism too far, but we also may be too credulous. »

Massignon, L. (*editor*). Annuaire du monde musulman. Statistique, historique, social et économique. Seconde édition (1925). 397 p. Paris, ERNEST LEROUX, 1925. ISIS

Table des matières : A. Généralités : Calendrier pour 1924-29; Grandes dates de l'Islam; Sommaire de l'an écoulé, 1923-24. — B. Notices relatives à chaque pays musulman. — C. Index général de la presse musulmane. — D. Liste des centres d'études linguistiques et culturelles des peuples islami-

ques. — E. Vocabulaire technique de l'Islam (cartographie, congrès, statistique). G. S.

Meyerhof, Max. New light on the early period of Arabic medical and ophthalmological science. *Bulletin de la Société d'Ophtalmologie d'Egypte*, p. 25-37, 4 pl. Cairo, 1926. ISIS

The author has examined two similar MSS. copied in the second half of the XIIth century by two physicians of the same family and containing each eight or nine Arabic ophthalmological treatises. One of these MSS. belongs to AHMED TAIMÛR PASHA in Cairo, the other to the Academy of Sciences of Leningrad. Both collections are defective but together they form a nearly complete set of the oldest textbooks on ophthalmology, as follows : 1. The Alteration of the Eye by IBN MÂSAWAIH (first half of IXth cent.); 2. The Knowledge of the Oculist's Examinations, a smaller treatise (wrongly) ascribed to the same; 3. A summary ascribed to GALEN (later than IXth cent.); 4. The great treatise of ḤUNAIN IBN ISḤÂQ (second half of IXth cent.); 5. A smaller treatise ascribed to the same; 6. A treatise ascribed to one 'ALÎ IBN IBRÂHÎM IBN BAKHTYASHÛ (unknown member of an illustrious family of Nestorian physicians), this treatise is posterior to AL-RÂZÎ and anterior to the second half of the XIIth cent.; 7. The Memorial of the Oculists by 'ALÎ IBN 'ISÂ (first half of XIth cent.) which HIRSCHBERG and MEYERHOF agree in considering the best ophthalmological treatise written, East or West, before the XVIIIth century!; 8 Selections in the Treatment of Eye Diseases by 'AMMAR IBN 'ALÎ AL-MAWṢILÎ (first half of XIth cent.); 9. The Book of Vision and Perception, a shameless plagiarism of the preceding work, stupidly ascribed to THÂBIT IBN QURRA ! MEYERHOF describes briefly each of these treatises, indicating their respective qualities and some peculiarities of their technical vocabulary. I quote a sentence of his conclusion : « The Arabs knew of more than a hundred eye-diseases and a great many ophthalmic operations. Among the eye-diseases unknown to the Greeks I may mention the pannus, a Latin word translated from the Arabic sabal, and the cure of this disease by peritomy, laqṭ ». Four facsimile plates represent the chiasma of the optic nerves, the muscles of the eye, the optic nerve, the inner tunics of the eye. This is a very stimulating publication. G. S.

Meyerhof, Max. Die Ausgrabungen von AL-FUSṬÂṬ. *Der Islam*, 14, 91-94, 1925. ISIS

Mez, Adam (1869-1917) und die Renaissance des Islams. Obituary by C. H. BECKER. *Der Islam*, 13, 278-280, 1923. ISIS

Musil, Alois. The northern Ḥejâz : a topographical itinerary. (*American Geographical Society, Oriental Explorations and Studies*, no. 1). XII + 374 p., 86 illus. in text, 2 maps in pocket. New York, the American Geographical Society, 1926. ISIS

The first of a series of six volumes now being published by the American Geographical Society which will embody the scientific result of Professor MUSIL's extended explorations in Arabia, 1908-1915. For a general statement regarding the geographical aspects of these explorations see *Geographical*

Review, 17, 1927, p. 177-206. The present volume deals with explorations of 1910 in the Northern Ḥejâz. In the appendices of this volume are discussions of Biblical, Classical, and Arabic notices regarding the region. J. K. W.

Musil, Alois. Arabia Deserta : a topographical itinerary. XVII + c. 650 p., 119 ills. in text ; 1 map in pocket, 1 map (4 sheets) in accompanying case. (*American Geographical Society, Oriental Explorations and Studies*, no. 2). New York, American Geographical Society, 1927. ISIS

See the preceding note. This deals with the region lying between the Euphrates, the Ḥejâz Railway, and the Nefûd desert. The appendixes contain discussions of classical and mediaeval Arabic notices regarding this region. J. K. W.

Newcomb, Rexford. The ceramics of Saracenic Syria, Turkey and Egypt. (*Architectural monographs on tiles and tile-work*, no. 5). 35 p., 37 fig. Beaver Falls, Pa., Associated Tile Manufacturers, 1926. ISIS

Odinot, Capitaine **Paul.** Le monde marocain. Paris, RIVIÈRE, 1926. ISIS

Oestrup, J. Studien über 1001 Nacht. Aus dem Dänischen (nebst einigen Zustäzen) übersetzt von OSKAR RESCHER. Als Manuscript in 60 Exemplaren gedruckt. 134 S. Stuttgart, 1925. ISIS

Reviewed by JOSEF HOROVITZ, *Deutsche Literaturzeitung*, 1937-1940, 1926.

Przyluski, J. Le prologue-cadre des Mille et une nuits et le thème du Svayamvara. Contribution à l'histoire des contes indiens. *Journal Asiatique*, 205, 101-137, 1924. ISIS

Sânchez Pérez, José Augusto. Partición de Herencias entre los Musulmanes del Rito malequí. Con transcripción anotada de dos manuscritos aljamiados. (Junta para ampliación de estudios e investigaciones científicas; Centro de estudios históricos). XVI + 312 p., facsimile and plates in folio. Madrid, 1914. ISIS

Reviewed by J. RUSKA, *Der Islam*, 13, 149, 1923.

Schacht, Joseph. Die arabische ḥijal-Literatur. Ein Beitrag zur Erforschung der islamischen Rechtspraxis. *Der Islam*, 15, 211-232, 335, 1926. ISIS

Ḥiyal meaning frauds, deceptions, refers here to lawyers' tricks, legal quibbles. G. S.

Seybold, Christian Friedrich (1859-1921). Obituary by R. HARTMANN. *Der Islam*, 12, 202-206, 1922. ISIS

Westermarck, Edvard. Ritual and belief in Morocco. Two volumes. London, MACMILLAN, 1926. ISIS

Wiedemann, Eilhard. Beiträge zur Mineralogie usw. bei den Arabern. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 48-54, 1927. ISIS

Apropos of a few MSS. of the Gotha Library; No. 2117, a lapidary extracted from the Durrat al-ghawwâṣ (the diver's pearls) of AL-JILDAKÎ (first half of XIVth century); No. 1347, a treatise by IBN MUḤAMMAD IFLÂṬÛN AL-ḤURMUSÎ AL-'ABBASÎ AL-MADANÎ AL-MIṢRÎ AL-BISṬÂMÎ (otherwise unknown); No. 1413, a treatise by MUḤAMMAD IBN ABI'L KHAIR AL-ḤASANÎ of the year 1103. G. S.

PART III.

SYSTEMATIC CLASSIFICATION.

Including only the material which could not be included in Parts I and II. Hence studies on Japanese astronomy or on XIIth century astronomy are not classified below under astronomy, but above, respectively under Japan (in Part II) and XIIth Century (in Part I).

The sections forming Part III are classified as follows:

I. *Science in general* : 15. Bibliography; 16. History; 17. Organization; 18. Philosophy.

II. *Formal sciences* (Knowledge of forms) : 19. Logic and Theory of Knowledge; 20. Mathematics; 21. Statistical methods.

III. *Physical sciences* (Knowledge of inorganic nature); 22. Mechanics ; 23. Astronomy; 24. Physics ; 25. Chemistry (Physico-chemistry, Industrial chemistry); 26. Technology.

IV. *Biological sciences* (Knowledge of organic nature) : 27. Biology (Generalities, « Natural history »); 28. Botany (Agronomy, Phytopatholo-gy, Palaeobotany); 29. Zoology.

V. *Sciences of the earth* (implying knowledge of both organic and inorganic nature): 30. Geodesy; 31. Geography and Oceanography ; 32. Geology, Mineralogy, Paleaontology, Mining ; 33. Meteorology, Climatology and Terrestrial Physics.

VI. *Anthropological and historical sciences* (Knowledge of man, past and present): 34. Anatomy; 35. Physical anthropology (anthropometry and races of man); 36. Physiology (human and comparative); 37. Psychology (human and comparative) ; 38. Archaeology (generalities, methods); 39. Prehistory; 40. Ethnology (primitive and popular science); 41. Superstition and Occultism.

42. Economics (economic doctrines and history; commerce; transportation and communications); 43. Sociology, Jurisprudence and Positive Polity ; 44. History of Civilization (general history, historical methods, biography and chronology); 45. History of art (Art and science; Iconography; Arts and crafts); 46. History of Language, Writing and Literature; 47. History of morals (Moral organization of society); 48. History of Philosophy; 49. History of Religion (Science and religion).

VII. *Medicine* : 50. History, organization and philosophy of medicine ; 51. Epidemiology, History of special diseases. Public health and Social medicine; 52. History of hospitals and of medical teaching; 53. Pharmacy; Pharmacology; Toxicology.

VIII. *Education* (the methods of accumulating, imparting and diffusing knowledge); 54 Education (Generalities, Methods, Colleges, Universities); 55. Academies, societies, congresses, National and international organization of science; 56. Bibliography. (Methods, Libraries); 57. Museology (Museums and Collections).

IX. 58. Alia; 59. Errata.

The applied sciences are not disconnected from the pure sciences, but, as far as possible, the principles and applications of science are considered successively in the same section. However, applications based upon the principles of many sciences are dealt with separately (ex. technology; medicine; education).

I. — SCIENCE IN GENERAL.

16. — HISTORY OF SCIENCE.

Darmstaedter, Ludwig (1846-). Naturforscher und Erfinder : Biographische Miniaturen. VII + 182 p., 16 Tafeln. Bielefeld, VELHAGEN und KLASING, 1926. ISIS

Darmstaedter, Ernst (*editor*). Münchener Beiträge zur Geschichte und Literatur der Naturwissenschaften und der Medizin. Unter Mitwirkung von H. BAALSS, H. DINGLER, F. M. G. DE FEYFER, H. FISCHER, H. KERSCHENSTEINER, K. KISSKALT, A. C. KLEBS, H. MARZELL, TH. PAUL, W. PRANDTL, H. SIERP, G. STICKER, K. SUDHOFF, R. TISCHNER, H. WIELEITNER, E. ZINNER. Verlag der Münchner Drucke, München, 1926 sq. ISIS

A new collection of monographs on the history of science of which the first three numbers are analyzed in the present bibliography : E. DARMSTAEDTER on AGRICOLA; the same on Berg-, Probier. und Kunstbüchlein, and a new edition of WALAHFRID's Hortulus. Each part, containing from 32 to 96 pages will cost from 3 to 6 Mk. Our every good wish to this new undertaking. G. S.

Gumprecht, F. Leben und Gedankenwelt grosser Naturforscher. (*Wissenschaft und Bildung*, 232). V + 166 S. Leipzig, QUELLE und MEYER, 1927. ISIS

Deals with ALEXANDER VON HUMBOLDT, HELMHOLTZ, R. MAYER, DARWIN, HAECKEL.

(Isis) Indexes to *Isis*. *Isis*, 7, 492, 1925. ISIS

(Italy). Primo convegno nazionale di storia della scienza in Palermo. *L'Universo*, 7, 595-596, 1926. ISIS

Brief notice of the First (Italian) National Congress for the History of Science held at Palermo, May 24-27, 1926. A series of papers was read illustrating more particularly the development of scientific studies in Sicily. The Istituto Geografico Militare presented an exhibit of maps showing the develop-

ment of Sicilian cartography. It is hoped that after future congresses of this same sort have been held a series of regional monographs may be produced constituting a « veritable Corpus of the History of Science in Italy. » J.K.W.

Mayer, Joseph. The seven seals of science. An account of the unfoldment of orderly knowledge and its influence on human affairs. IX + 444 p., 43 illustrations, including many plates. New York, Century Co., 1927. ISIS

A popular account of the history of science, engagingly written, beautifully illustrated. The acknowledgements on p. IX are not quite clear. I allowed the author to draw upon my collection of portraits; I had nothing whatever to do with his text. G. S.

Mieli, Aldo. La storia della scienza in Italia. *Arch. di storia d. scienza*, 7, 36-48, 1926. ISIS

Prolusione ad un corso di storia delle scienze, tenuda nella R. Università di Perugia il giorno 9 marzo 1926.

(Russia). Academy of Sciences of the Union of Soviet Socialist Republics-The Pacific Russian Scientific Investigations. 192 p., 2 figs., 13 maps, 1 table, 11 plates. Leningrad, Publishing Office of the Academy, 1926. ISIS

« A record of the researches of Russian travellers and investigators in the vast expanse of the Pacific throughout a period of two centuries. » Opens with a sketch by L. BERG of « Russian discoveries in the Pacific », 1639 to 1829; this is followed by contributions on Cartography (by V. AKHMATOV); Geology (by A. KRYSHTOFOVICH); Seismology (by P. NIKIFOROV); Terrestrial magnetism (by AN. BELOBROV); Oceanography (by V. AKHMATOV); Meteorology (by W. WIESE); Botany (by V. KOMAROV); Zoology (by P. SCHMIDT); Ethnography (by L. STERNBERG). Each of these articles is followed by short bibliographies of Russian and other publications and all but the first carry the discussion of their respective subjects down to the present time. J. K. W.

Sarton, George. Eighth report to the Carnegie Institution, to June 30 1926. *Carnegie Institution Year Book*, No. 25, 388, 1926. ISIS

Struik, D. J. Het probleem « De impletione loci ». *Nieuw Archief voor Wiskunde*, 15, 121-137, 1925. ISIS

Timpanaro, Seb. GALILEO. Pagine di scienza con introduzione, note e ritratti (Edizioni Mondadori per le Scuole Medie). 449 p. Milano, MONDADORI, 1925. (L. 14). ISIS

This is a companion volume to the Leonardo previously reviewed (*Isis*, 8, 797). It answers the same purpose, namely to offer the student selected fragments from the works of the foremost Italian scientists. The extracts are completed by means of biographical and bibliographical notes. The following authors are represented : GALILEO GALILEI, EVANGELISTA TORRICELLI,

CARLO DATI, LORENZO MAGALOTTI, LUIGI GALVANI, ALESSANDRO VOLTA, GIUSEPPE ZAMBONI, AMEDEO AVOGADRO, MACEDONIO MELLONI, CARLO MATTEUCCI, GALILEO FERRARIS, STANISLAO CANNIZZARO, ANTONIO PACINOTTI, PIETRO BLASERNA, ICILIO GUARESCHI, AUGUSTO RIGHI, GIACOMO CIAMICIAN. By way of introduction there is a notice to the memory of RIGHI, who was the author's teacher. A well printed book which will prove useful not only to Italian teachers and students, but also to foreigners. G. S.

Vetter, Quido. Co spojuje naši kulturu s kulturou antickou v matematice a vědách exaktních. (Rapport entre les civilisations antique et moderne concernant les mathématiques et les sciences.) *Zvlástni otisk z « Ceské Revue »*. Ročnik XVII. Cislo 4, (c. 1924). ISIS

18. — PHILOSOPHY OF SCIENCE.

Busco, P. Science et réalisme. A propos de la philosophie d'EMILE MEYERSON. *Revue gén. des Sciences*, 38, 101-105, 1927. ISIS

Dingler, Hugo. Der Zusammenbruch der Wissenschaft und der Primat der Philosophie. München, ERNST REINHARDT, 1926. ISIS

Reviewed by HEINRICH WIELEITNER in *Süddeutsche Monatshefte*, 24, 61-66, Oktober 1926.

Lewis, Gilbert Newton. The anatomy of science. (Yale University, Mrs. Hepsa Ely Silliman Memorial Lectures). x + 221 p. New Haven, Yale University Press, 1926. ISIS

Reviewed by ALEX. FINDLAY, *Nature*, 119, 228-229, 1927.

Sauer, Wilhelm. Grundlagen der Wissenschaft und der Wissenschaften. Eine logische und sozialphilosophische Untersuchung. XVI + 439 S. Berlin-Grunewald, Dr. WALTHER ROTHSCHILD, 1926. ISIS

Reviewed by H. WIELEITNER, *Mitt. zur Geschichte der Medizin*, 25, 281, 1926.

II. FORMAL SCIENCES

(Knowledge of forms).

19. — LOGIC AND THEORY OF KNOWLEDGE.

Dieck, W. Der Widerspruch im Richtigen. Gemeinverständliche mathematische Kritik der geltenden Logik. 154 S. Sterkrade, W. OSTERKAMP, 1926. (Mk. 6) ISIS

Der Verf. hat sich durch H. VAIHINGERS « Philosophie des Als ob » (oder die Lehre von den Fiktionen) begeistern lassen. Dies ist nun an sich, wie jede philosophische Stellungnahme, bis zu einem gewissen Grad Geschmacksache. In seinem mathematischen Kapitel hatte nun aber VAIHINGER nur mit den älteren Begriffsbildungen der Mathematik operiert, die freilich viele

« Fiktionen » enthielten. Dass nun aber der Verf., der die neueren strengeren Begriffsbildungen kennt, trotzdem ein ganzes Buch über die mathematische Fiktionenlehre schrieb, wird ihm wohl wenig Zustimmung einbringen. Man wird Bedenken haben, selbst wenn man zugibt, dass in den mathematischen Grundlagen auch heute noch manches zu verbessern ist. Doch wird das Buch gerade heute zur Klärung mancher Unterrichtsfragen, als Stimme von der anderen Seite, einiges beitragen können. H. W.

Dorolle, Maurice. Les problèmes de l'induction. Préface de ANDRÉ LALANDE. XII + 148 p. *Biblioth. de philosophie contemporaine*, FÉLIX ALCAN, Paris, 1926. ISIS

Tandis que les philosophes ont surtout cherché à rendre compte d'une part des principes de l'induction, de l'autre des fondements de l'induction (en particulier, JULES LACHELIER : du fondement de l'induction, suivi de psychologie et métaphysique, 6e édit., ALCAN, 1896), DOROLLE s'est surtout demandé quelles sont les conditions techniques que doit remplir une induction valide. Il cherche d'abord « quels rapports il y a lieu d'établir exactement entre les termes d'induction et de généralisation », et montre, serrant de près la généralisation, qu'elle n'est pas caractéristique de l'induction, mais que le fond de l'induction « est l'ensemble des opérations par lesquelles on passe des données à la loi »; c'est donc un travail de détermination dont la valeur est « à la mesure des déterminations, fixées par le rapport à la science qui s'accroît, et du même coup, perfectionne et les techniques et leur interprétation. » L. G.

Mac Leod, Andries H. D. Sur diverses questions se présentant dans l'étude du concept de réalité. XI + 239 p. Paris, Librairie scientifique, J. HERMANN, 1927. ISIS

La genèse de ce travail est due à l'influence du philosophe suédois ADOLF PHALÉN, mais c'est toutefois une création originale qui ne reproduit qu'en partie l'enseignement de l'Université d'Upsal. L'auteur s'est proposé de rendre plus claire l'idée représentée par l'expression « quelque chose de réel ». Il est impossible de résumer ici son livre; il suffira de dire que la méthode, la prudence et la modestie de l'auteur nous inspirent toute confiance. Sa modestie est bien illustrée par le dernier paragraphe : « Dans le courant des méditations qui précèdent, je me suis souvent exprimé comme si j'étais très fortement convaincu de la vérité de mes opinions. Mais lorsque dans la philosophie on jette un coup d'œil rétrospectif sur ses propres méditations, on éprouve toujours un sentiment de doute plutôt qu'un sentiment de certitude. Aussi je ne m'imagine nullement avoir fourni des solutions définitives et inébranlables des problèmes que j'ai cherché à résoudre. J'espère seulement que ce travail pourra contribuer à faire progresser l'étude de ces problèmes. » Il est utile de rappeler que le même auteur nous avait donné en 1922 une admirable « Introduction à la géométrie non-euclidienne » (*Isis*, 5, 552); c'est assez dire qu'il a appris l'art de penser, art difficile et méconnu, à bonne école. G. S.

20. — MATHEMATICS.

Baxandall, D. Catalogue of the collections in the Science Museum,

South Kensington, with descriptive and historical notes and illustrations. Mathematics. I : Calculating machines and instruments. 85 p., 13 pl. London, H. M. Stationery Office, 1926 (*not seen*). ISIS

Betsch, Christian. Fiktionen in der Mathematik. XXIV + 372 S. Stuttgart, FR. FROMANN, 1926. (Mk. 10). ISIS

Dieses Buch, etwas nach dem von W. DIECK (q.v., *supra*) herausgekommen, ist umfangreicher, kritischer und wohl auch tiefer als das erstere. Allerdings kommt BETSCH auch zu einem anderen Resultat als DIECK. Nach einer langen allgemeinen Erörterung über den Fiktionsbegriff, der auch bei VAIHINGER keineswegs eindeutig und klar ist, betrachtet er die sog. Fiktionen in der Mathematik, indem er unter kritischer Berücksichtigung einer grossen Literatur eine vollständige philosophische Grundlegung der Mathematik gibt. Dabei kommt er zu dem Schluss, dass überall, wo die Mathematik logisch schon ganz durchgebildet ist, wirkliche « Fiktionen », d. h. in sich widerspruchsvolle Begriffe, nicht mehr auftreten. Dies kam freilich im Laufe der Geschichte öfter vor, und ist heute noch in unentwickelten Gebieten, wie der Mengenlehre der Fall. VAIHINGERS Auffassungen beruhen, auch wo er sich auf die Zustimmung moderner Mathematiker, wie M. PASCH u.a. beruft, durchweg auf Missverständnissen. H. W.

Bolzano, Bernhard. Philosophie der Mathematik oder Beiträge zu einer begründeteren Darstellung der Mathematik. Neu hrsg. mit Einleitung und Anmerkungen von H. FELS. (F. Schöninghs Sammlung philos. Lesestoffe, 9). 88 S. kl. 8. Paderborn, F. SCHÖNINGH, 1926. ISIS

Dieses im Jahre 1910 zum erstenmal in Prag erschienen Schriftchen erfährt jetzt seine zweite Auflage. Diese wird auch nach der endlich berühmt gewordenen « Wissenschaftslehre » willkommen sein, da sie die Wurzeln der (wie bei dem Vorbild LEIBNIZ) mathematisch gegründeten Philosophie BOLZANOS bloss legt. Was FELS hinzugegeben hat, ist sehr gut. Es sei erinnert, dass derselbe im *Philos. Jahrb. d. Görresges.* 1926 ein ausführliches Lebensbild BOLZANOS gegeben hat. H. W.

Cajori, Florian. Early proofs of the impossibility of a fourth dimension of space. *Archivio di Storia della Scienza*, 7, 25-28, 1926. ISIS

Cajori, Florian. Origins of fourth dimension concepts. *American Mathematical Monthly*, 33, 397-406, 1926. ISIS

« We have seen that the fourth dimension concept was approached as a generalization of the three dimensions or as a graphic representation in algebra and physics, but was rejected during 2000 years, as contrary to sense experience. The earliest acceptance of a fourth dimension of space was made by a devout theologian (HENRY MORE, 1659) providing a suitable abode for the soul and for spirits. In the nineteenth and twentieth centuries it proved an aid to mysticism and occultism. The transcendental formulation of geometric assumption led to extensive studies of geometry and of kinematics in hyperspace. In eighteenth century mechanics, time as a fourth dimension was loosely added to the three dimensions of space. In the twentieth century,

transcendentalism is followed by realism; time as a fourth dimension enters studies relating to the very anatomy of physical science. Time and the three dimensional space become inseparable; « they melt in a surprising manner into one another, like sunset tints or the colors of the dying dolphin ».

Chaslin, Philippe (1857, 02, 14 — 1923, 07, 26). Essai sur le mécanisme psychologique de la mathématique pure. VIII + 272 p., portrait de l'auteur. F. ALCAN, Paris, 1926. (34 fr.) ISIS

Réflexions d'un médecin psychologue qui cherchait avant tout « à déméler les opérations de la pensée malade pour y trouver, à l'exemple de son maître RIBOT, des occasions de mieux comprendre le mécanisme de la pensée normale », sur certaines parties des mathématiques qui figurent aux programmes des lycées; la géométrie non euclidienne, la géométrie analytique, le calcul vectoriel, le calcul des probabilités sont laissés de côté; mais une pointe est poussée sur le transfini et la théorie des ensembles (50 pp.). L'auteur, qui se reporte souvent, comme il est naturel, à P. BOUTROUX, L. BRUNSCHVICG, E. MACH, E. GOBLOT, H. POINCARÉ, E. RIGNANO, dissèque les opérations de l'esprit relatives à la notion de nombre, à la théorie des fonctions, à l'étude des séries; ceci l'amène à donner sa définition des mathématiques : « la mathématique pure est la science des opérations réelles ou imaginées directement ou symboliquement, — surtout symboliquement — de composition, de décomposition, de formation complexe, de rangement et de correspondance que nous pouvons faire ou que nous ne pouvons pas faire sur les collections d'objets ou de phénomènes réels ou imaginés; ces opérations sont suggérées à l'esprit de l'homme par la vie pratique d'abord, puis la vie scientifique et par sa propre imagination ». L'ouvrage se termine par un court chapitre (10 p.) sur l'aptitude mathématique. L. G.

Dudeney, Henry Ernest. Modern puzzles and how to solve them. 190 p., illus. London, PEARSON, 1926. ISIS

Du Pasquier, L. Gustave. Le calcul des probabilités. Son évolution mathématique et philosophique. XXI + 304 p. Paris, J. HERMANN, 1926. ISIS

Reviewed by P. J. RICHARD, *Revue gén. des Sciences*, 38, 83-84, 1927.

Enriques, Federigo. Gli Elementi d'EUCLIDE e la critica antica e moderna. Col concorso di diversi collaboratori. Libri I-IV. 325 p. Roma, A. STOCK, 1925. ISIS

Reviewed by DAVID EUGENE SMITH, *American Mathematical Monthly*, 33, 383, 1926.

Errera, A. Exposé historique du problème des quatre couleurs. *Periodico di matematiche*, 7, 20-41, 1927. ISIS

Fraenkel, Adolf. Zehn Vorlesungen über die Grundlegung der Mengenlehre. Gehalten in Kiel auf Einladung der Kant-Gesellschaft,

Ortsgruppe Kiel, vom 8. - 12. Juni 1925. (*Wissenschaft und Hypothese*, XXXI). x-182 S. Leipzig, B. G. TEUBNER, 1927. (Mk. 8) ISIS

Inhalt : Umrisse der Cantorschen Mengenlehre. Die Antinomien der Mengenlehre und ihre Wirkung; Die nichtprädikativen Begriffsbildungen. Der Intuitionismus; Die Axiome der Mengenlehre; Verschärfung des Aussonderungsaxioms. Allgemeines und Historisches zum Axiomensystem. Theorie der Äquivalenz; Theorie der Ordnung. Die endlichen Mengen. Über die Vollständigkeit, Widerspruchsfreiheit und Unabhängigkeit des Axiomensystems.

Gandz, Solomon. The origin of the term « algebra ». *American Mathematical Monthly*, 33, 437-440, 1926. ISIS

« It would seem that the expression 'ilm al-jabr w'al-muqâbalah ought to be rendered simply as Science of equations, al-jabr being the Assyrian and al-muqâbalah the Arabic name for equation .» This is not at all convincing. G. S.

Gandz, Solomon. On three interesting terms relating to area. *American Mathematical Monthly*, 34, 80-86, 1927. ISIS

Philological discussion of the terms meshiḥah, chroia (Greek) and taksîr (thishboreth) and derivatives. G. S.

Gonseth, F. Les fondements des mathématiques. De la géométrie d'EUCLIDE à la Relativité générale et à l'intuitionisme. Préface de JACQUES HADAMARD. XVI + 244 p., ALBERT BLANCHARD, Paris, 1926. ISIS

Voici l'idée centrale de cette étude d'ensemble sur les fondements des mathématiques : bien que la méthode axiomatique soit d'une nécessité fondamentale, « il n'est pas de domaine des mathématiques, si petit soit-il, où l'axiomatique se suffise à elle-même », « il n'est pas un seul système d'axiomes dont il soit possible de *prouver* le droit à l'existence »; la discussion roule sur les axiomes de HILBERT, GEIGER, DEDEKIND, WEIERSTRASS, etc., les géométries non-euclidiennes, la relativité, les essais de WEYL, BROUWER. L. G.

Löwy, Heinrich. Die Krisis in der Mathematik und ihre philosophische Bedeutung. *Die Naturwissenschaften*, H. 30, 706-708, 1926. ISIS

Loria, Gino. Punti interrogativi nella storia delle matematiche. *Arch. di storia d. scienza*, 7, 4-17, 1926. ISIS

Vetter, Quido. La Boemia nella storia della matematica. Supplemento alla « Guida allo studio della storia delle matematiche », del Prof. GINO LORIA (Milano, HOEPLI, 1916). 31 p. *Bollettino di Matematica*, 1924. ISIS

Vetter, Quido. A vyvojí názoru na analyzu a syntezu v matematice·

(Sur le développement des idées concernant l'analyse et la synthèse dans la mathématique). *Ceská mysl*, 19, 147-158, 1923. ISIS

Vetter, Quido. O českých matematicích z řad profesorstva středoškolského. (Sur les mathématiciens tchèques dans l'enseignement secondaire). 7 p. (Zvláštni výtisk o literární činnosti českých profesoru středoškolských). Prag 1925. ISIS

Vetter, Quido. Sullo sviluppo della matematica in Boemia. *Periodico di matematiche*, 1, 380-382, novembre 1921. ISIS

Vetter, Quido. Jak se počítalo a meřilo na úsvite kultury. (Comment on a compté et mesuré à l'aube de la civilisation). (Lidová Universita, svazek 15). 144 p. Prag, MELANTRICH, 1926. ISIS

Vetter, Quido. Intorno al metodo nella storia della matematica. *Bollettino di matematica*, sez. storico-bibliogr., p. XXXIII-XLII, etc. 1922. ISIS

Weyl, Hermann. Philosophie der Mathematik. (Handbuch der Philosophie, hrsg. von A. BAEUMLER und M. SCHRÖTER, Abtlg. II A, Teil 1 und 2). 162 S. München, OLDENBOURG, 1926. ISIS

Reviewed by E. ZILSEL, *Die Naturwissenschaften*, 24-27, 1927.

Yeldham, Florence A. The story of reckoning in the Middle Ages. With an introduction by CHARLES SINGER. 96 pages, illustrated. London, GEORGE G. HARRAP, 1926. ISIS

The history of arithmetic has apparently become a very popular subject. To speak only of English books, DAVID EUGENE SMITH's excellent History of Mathematics (2 vol. ,Boston, 1923-1925; *Isis*, 6, 440-444; 8, 221-225) contains a very elaborate treatment of arithmetical subjects, and L. C. KARPINSKI's History (New York, 1925; *Isis*, 8, 231-232) is exclusively devoted to them. The scope of Miss YELDHAM's book is more modest but her story largely based upon the examination of the original documents is more concrete; she approaches fewer topics but deals more fully with each of them. For example, she translated the whole chapter of BEDE's *De temporum ratione*, on finger reckoning. A happily chosen frontispiece, taken from REISCH's *Margarita philosophica* (1517) illustrates the two main aspects of mediæval arithmetic, abacus and algorism, which also form the two divisions of her book. She explains at considerable length how calculations were actually made either way. To quote from SINGER's preface : « She recounts the slow and painful process by which the simple rules of arithmetic have come into use. That process is an illustration, in a particular field, of the labour and effort required to raise mankind out of the intellectual trough of the Dark and Middle Ages. Of late there has flourished a school that would exalt mediæval over modern civilization. One disposed to take this despondent view of our present state may be commended to think himself back. if he can, into the mathematical ineptitude of the twelfth century. A simple multiplication sum, such as can

now be mastered in the nursery, then required the employment of a highly trained specialist ! The solution of these simple mathematical problems was held to be so wonderful that those who achieved it were regarded as tainted with magic ! And yet we are sometimes told that modern developments make all but specialist thought impossible, as though real advance were not to be tested by the simplicity rather than the complexity of the methods involved. » G. S.

21. — STATISTICS.

(History and methods. Tables and generalities. For the applications, refer to the sciences to which they are applied.)

Johns, Victor. On the mechanical handling of statistics. *American Mathematical Monthly*, 33, 495-501, 1926. ISIS

III. PHYSICAL SCIENCES

(Knowledge of inorganic nature).

22. — MECHANICS.

(Including Celestial mechanics.)

Andoyer, Henri. La théorie de la lune. (*Collection Scientia*, no. 17) 90 p. Paris, GAUTHIER-VILLARS, 1926. ISIS

Reviewed by JEAN MASCART, *Revue gén. des Sciences*, 37, 180, 1927.

Anglas, Jules. D'EUCLIDE à EINSTEIN. Relativité et connaissance. 121 p., 21 fig. Paris, STOCK, 1926. ISIS

Borel, Emile. Space and time. XIV + 234 p. London, BLACKIE, 1926. ISIS

Eddington, Arthur Stanley. Relativitätstheorie in mathematischer Behandlung. Autoris. m. Zusätzen und Erläuterungen versehene Übersetzung von ALEX. OSTROWSKI und HARRY SCHMIDT mit einem Anhang : EDDINGTONS Theorie und HAMILTONsches Prinzip von ALBERT EINSTEIN. (*Die Grundlehren d. Mathem. Wissenschaften in Einzeldarstellungen m. besond. Berücksichtigung d. Anwendungsgebiete.* Hrsg. von R. COURANT, Bd. 18). XIV + 377 p. Berlin, SPRINGER, 1925. ISIS

Reviewed by H. THIRRING, *Deutsche Literaturzeitung*, 2058-2060, 1926.

Gehrcke, Ernst. Die Massensuggestion der Relativitätstheorie. Kulturhistorisch-psychologische Dokumente. VIII + 108 S. 17 Abb. Berlin, HERMANN MEUSSER, 1924. ISIS

Gent, Werner. Die Philosophie des Raumes und der Zeit. Historische, kritische und analytische Untersuchungen. Die Geschichte der Begriffe des Raumes und der Zeit von ARISTOTELES bis zum vorkritischen KANT (1768). XII + 273 S. Bonn, FR. COHEN, 1926. (Mk. 10) ISIS

In 53 Kapiteln behandelt Verf. auf Grund einer staunenswerten Literaturkenntnis 53 durch Schulen oder einzelne Männer dargestellte Phasen dieses ewig neuen Problems rein quellenmässig, ohne Wertungen, bei denen man zu leicht vorbeiwertet, wie Verf. selbst sagt. Da hier auch alle grossen Naturforscher zu Wort kommen, geht uns das alles sehr nahe an. Überall ist schon hier mit der allerneuesten Einstellung der Wissenschaft (EINSTEIN, WEYL) Fühlung genommen. Von bemerkenswerten Erkenntnissen sei nur auf die Abhängigkeit NEWTONS von HENRY MORE und BOSCOVICH's von SUAREZ hingewiesen, die hier deutlich hervortreten. Den versprochenen zweiten Teil erwarten wir mit Spannung. H. W.

Larmor, Sir Joseph. Newtonian time essential to astronomy. Supplement to *Nature*, 119, 49-60, April 9, 1927. ISIS

Lemaître, Georges. La théorie de la relativité et l'expérience. *Revue des questions scientifiques*, 20, 04, 1926, 346-374. ISIS

Leredu, Raymond. L'équivoque d'EINSTEIN. III + 67 p., Paris, Les Presses universitaires de France, 1925. ISIS

Zilsel, Edgar. Über die Asymmetrie der Kausalität und die Einsinnigkeit der Zeit. *Die Naturwissenschaften*, 15. Jahrg. 280-286, 1927. ISIS

23. — ASTRONOMY.

Bigourdan, Guillaume. Les comètes. Liste chronologique de celles qui ont paru de l'origine à 1900, ou éléments d'une statistique cométaire. Appendice A de l'Annuaire pour l'An 1927, publié par le Bureau des Longitudes. 76 p. Paris, GAUTHIER-VILLARS, 1927. ISIS

Catalogue de 1277 observations de comètes faites dans diverses parties du monde depuis 2349 avant J. C. jusqu'à 1898. G. S.

Boccardi, Jean. Les variations dans la rotation de la terre. *Revue gén. des Sciences*, 38, 76-82, 1927. ISIS

Brown, Ernest W. Changes in the length of the day. *Nature*, 119, 200-202, 1927. ISIS

« At the present moment the answer to the question as to whether the rate of rotation of the earth is fluctuating, depends almost wholly on the interpretation which shall be given to certain differences between the observed positions of two or three bodies in the solar system and their positions as

calculated from the laws of motion and gravitation. Owing to the unavoidable errors of observation, usually greater in the past than now, a detailed discussion of the astronomical data is necessary in order to discover, if possible, the extent to which the astronomical evidence is reliable. To me it has appeared to be sufficiently good to warrant full consideration of its consequences and to suggest further search for confirmation of the results. »

Cajori, Florian. Are the heavens full or are they void ? A history of hypotheses. *Scientific Monthly*, 23, 346-355, October 1926. ISIS

1. DESCARTES' theory of vortices. 2. Struggle between the systems of DESCARTES and NEWTON. 3. The eighteenth century. 4. The nineteenth century. 5. The MICHELSON and MORLEY experiment. 6. Is the special relativity theory doomed ? 7. The present an age of bewilderment.

Colson, F. H. The week : an essay on the origin and development of the seven-day cycle. VII + 126 p. Cambridge, University Press, 1926. ISIS

Reviewed by MARTIN P. NILSSON, *Deutsche Literaturzeitung*, 2463-2465, 1926.

Eddington, A. S. The internal constitution of the stars. VIII + 407 p. Cambridge, University Press, 1926. ISIS

Reviewed by SVEIN ROSSELAND in *Nature*, 119, 111-113, 1927.

Fairchild, Herman L. Our world in the making. *Science*, 64, 365-371, 1926. ISIS

Synoptic comparison of the nebular or Laplacian hypothesis and of the planetesimal theory defended by T. C. CHAMBERLIN and F. R. MOULTON for the last twenty five years, concluding in favor of the latter. G. S.

Green, Arthur Robert. Sundials; incised dials or mass-clocks, a study of the time-markers of medieval churches, containing descriptions, photographs, diagrams and analyses of dials, chiefly in Hampshire, but also in various other counties. XX + 203 p., illus. London, Society for Promoting Christian Knowledge, 1926. ISIS

Jeans, J. H. The survey of the stars. *Nature*, 119, 394-396, 1927. ISIS

From an address delivered to the Royal Astronomical Society on Feb. 11, referring to the award of the Gold Medal of the Society to FRANK SCHLESINGER for his work on stellar parallax and astronomical photography.

League of Nations. Report on the reform of the calendar submitted to the advisory and technical committee for communications and transit of the League of Nations by the special committee of enquiry into the reform of the calendar. (*Publications of the League of Nations*, VIII. Transit, 1926, VIII. 6). (A. 33, 1926, VIII.) 163 p. Geneva, League of Nations, 1926. ISIS

Lockyer, W. J. S. Total solar eclipses in the British Isles. *Nature*, 119, 87-90, 1927. ISIS

Interesting historical summary with special reference to the eclipse of June 29, 1927. A map shows the tracks of all total solar eclipses visible in Great Britain and Ireland from 878 to 1999. G. S.

Macpherson, Hector. Modern astronomy. Its rise and progress. 196 p., 26 fig., Oxford, University Press, 1926. ISIS

This is not a history of modern astronomy but rather a series of essays explaining present knowledge on fundamental topics with reference to the recent past. They are well informed and pleasantly written. They will be very useful to astronomers and other scientists who want to have a bird's eye view of present knowledge, and even more to historians of science, lecturing on astronomical subjects. The illustrations include a fine series of portraits. Contents : 1. Introductory; 2. Our knowledge of the moon; 3. Our nearest star — the sun; 4. The dwarf planets; 5. The giant planets; 6. Asteroids, comets and meteors; 7. The stars; 8. New stars and nebulæ; 9. Cosmology; 10. Cosmogony. Bibliography. G. S.

Mascart, Jean. Notes sur la variabilité des climats. Documents lyonnais, études de climatologie. Première partie. Introduction générale historique. Lyon, AUDIN, 1925. ISIS

Proctor, Mary. The romance of comets. XIII + 210 p.,, 16 pl. New York, HARPER, 1926. ISIS

Saussure, Léopold de. La série septénaire cosmologique et planétaire. *Journal Asiatique*, 204, 333-370, 1924. ISIS

« Les cinq planètes bien visibles à l'œil nu ont été naturellement seules connues des Anciens. Elles attirent l'attention des primitifs, d'abord parce qu'elles apparaissent au crépuscule avant les étoiles, puis parce qu'elles se déplacent parmi les constellations en suivant la même route oblique que la lune, route zodiacale qu'on constate, ultérieurement, être aussi celle du soleil. A ces astres dont la mobilité semble énigmatique, un grand rôle métaphysique a été attribué par les premiers peuples civilisés. Les cinq planètes, considérées seules ou en combinaison avec le soleil et la lune, ont ainsi donné lieu à des séries quinaires ou septénaires dont l'ordre d'énumération est lié à des idées cosmologiques ou religieuses qui présentent un grand intérêt pour l'histoire des sciences et des religions. »

Schoch, C. Die säkulare Acceleration des Mondes und der Sonne. 4 p. Selbstverlag, Berlin-Steglitz, Kuhligkshof 5, Dez. 1926. ISIS

Véronnet, Alexandre. Constitution et évolution de l'univers 480 p., 29 fig., G. DOIN et Cie, Paris, 1926. ISIS

En dehors des mémoires dont quelques uns ont été signalés ici (voir notamment *Isis*, 5, 295; 7, 287), on devait déjà à VÉRONNET une étude critique détaillée des *Hypothèses cosmogoniques modernes* (171 p., HERMANN et fils,

Paris, 1914). Voici qu'il nous donne un ouvrage important où est abordée l'étude des différents travaux relatifs aux problèmes qui se posent à propos de la constitution physique, de l'évolution et de la formation du soleil et des étoiles, et du problème général de la formation des astres. Voici le contenu du vol. Ch 1 et 2 : étude de l'équilibre physique d'un astre liquide (liquide homogène en rotation, et liquide hétérogène, cette dernière étude permettant de déterminer la figure exacte de la terre et des planètes, et, jusqu'à un certain point leur constitution interne). Ch. 3, 4, 5 : étude physique d'un astre gazeux. Ch. 6 et 7 : évolution de la chaleur solaire, évolution du soleil et des étoiles, âge du soleil et de la terre, évolution de la terre. Ch. 8 à 11 : les calculs sont étendus au problème général de la formation des étoiles dans un milieu nébulaire indéfini, l'attraction seule suffisant à l'auteur pour expliquer la concentration des astres, leurs mouvements de translation et de rotation, leurs températures, sans autre hypothèse que celle de la matière dispersée dans l'espace. Le dernier Ch. donne l'exposé et l'étude critique des hypothèses cosmogoniques de KANT, LAPLACE, FAYE, DU LIGONDÈS, BELOT, MOREUX, SEE, G. H. DARWIN, F. R. MOULTON et T. C. CHAMBERLIN, et enfin une très courte esquisse (16 p.) de la formation des astres d'après les calculs de A. VÉRONNET, en partant des électrons dispersés dans l'éther. L. G.

Véronnet, Alex. Étude critique des hypothèses cosmogoniques modernes. Deuxième partie. *Revue Générale des Sciences*, 37, 604-612, 1926. ISIS

6. Hypothèse du COLONEL DU LIGONDÈS; 7. Hypothèse de M. BELOT; 8. Hypothèse de M. l'abbé MOREUX; 9. Hypothèse de M. SEE; 10. Hypothèse de G. H. DARWIN; 11. Esquisse de la formation des astres d'après les calculs de A. VÉRONNET. First part in *Revue gén. des Sciences*, 36, 572, 1926.

24. — PHYSICS.

Born, Max. Probleme der Atomdynamik. Erster Teil : Die Struktur des Atoms; Zweiter Teil : Die Gittertheorie des festen Zustandes. Dreissig Vorlesungen, gehalten im Wintersemester, 1925-26, am Massachusetts Institute of Technology. XIII + 183 p. Berlin, J. SPRINGER, 1926. ISIS

Reviewed by H. S. ALLEN, *Nature*, 119, 77-79, 1927.

Busch, W. Die Entwicklung des Schiffskompasses in Sage und Geschichte. *Annalen der Hydrographie und Maritimen Meteorologie*, 54 Jahrg., 120-126, 169-174, 1926. ISIS

Darrow, Karl Kelchner. Introduction to contemporary physics. IX + 453 p. New York, D. VAN NOSTRAND, 1926. ISIS

Reviewed by W. H. WESTPHAL, *Die Naturwissenschaften*, 188, 1927.

Hardy, Sir William B. Properties of thin films. *Nature*, 118, 700-701, 1926. ISIS

Hoppe, Edmund. Geschichte der Optik. (J. J. Webers Illustrierte Handbücher). VI + 263 S. Leipzig, J. J. WEBER, 1926. ISIS

Hoppe, Edmund. Geschichte der Physik-Vorlesungstechnik. (Handbuch der Physik. Herausgeg. von H. GEIGER und K. SCHEEL, Bd. I). Berlin, SPRINGER, 1926. ISIS

Lampa, Anton. Die Physik in der Kultur. 84 S. München, GEORG D. W. CALLWEY, 1925. ISIS

Liesegang, Franz Paul. Zahlen und Quellen zur Geschichte der Projektionskunst und Kinematographie. 125 p. Berlin, Deutsche Druck- und Verlagshaus, 1926. ISIS

Lorentz, Hendrik Antoon. Lecture on theoretical physics, delivered at the University of Leiden. Authorised translation by L. SILBERSTEIN and A. P. H. TRIVELLI. Vol. I : Aether theories and aether models, edited by H. BREMEKAMP; Kinetical problems, edited by E. D. BRUINS and J. REUDLER. XI + 195 p. London, MACMILLAN, 1925. ISIS

Nernst, Walther. The new heat theorem; its foundations in theory and experiment. Translated from the second German edition by GUY BARR. XVI + 281 p., illus. London, METHUEN, 1926. ISIS

Reviewed in *Nature*, 119, 43-44, 1927.

Petrow, Nicolaus; Reynolds, Osborn; Sommerfeld, Arnold; Michell, Anthony G. M. Abhandlungen über die hydrodynamische Theorie der Schmiermittelreibung. Herausg. von L. HOPF. 227 S., 45 Fig., *Ostwald's Klassiker d. exakten Wissenschaften*, No. 218. Akad. Verlagsgesellschaft, Leipzig, 1927. ISIS

Edition de cinq travaux relatifs au frottement et à la théorie hydrodynamique du graissage : 1. N. PETROW (né en 1838) : Neue Theorie der Reibung (original en russe, 1887); 2. O. REYNOLDS (1842,08,23 — 1912,02,21) : Ueber die Theorie der Schmierung und ihre Anwendung auf Herrn BEAUCHAMP TOWERS Versuche (original in *Philos. Transact. of the Roy. Soc.*, 1t p., 1886; les travaux de BEAUCHAMP TOWER sont de 1883-4); 3. A. SOMMERFELD (né le 5 décembre 1862 à Königsberg) : Zur hydrodynamischen Theorie der Schmiermittelreibung (*Zschft f. Math. u. Physik*, 1904); 4. du même : Zur Theorie der Schmiermittelreibung (*Zschft f. technische Physik*, 1921); 5. A. G. M. MICHELL (né le 21 juin 1870 à Londres) : Die Schmierung ebener Flächen. L. G.

Sommerfeld, Arnold. Three lectures on atomic physics. Translated by HENRY L. BROSE. IV + 70 p. London, METHUEN, 1926. ISIS

Stoner, Edmund Clifton. Magnetism and atomic structure. XIII + 371 p., 56 fig. London, METHUEN, 1926. ISIS

Reviewed by WALTHER GERLACH, *Die Naturwissenschaften*, 20-21, 1927.

Turner, Dorothy M. Makers of science. Electricity and magnetism. XV + 184 p., 65 illustrations. With an introduction by CHARLES SINGER. Oxford, University Press, 1927. ISIS

This charming little book is in a way a sequel to a similar one by IVOR B. HART published in 1923 (*Isis*, 6, 241), but it has the advantage of being restricted to a much smaller scope, and this increases considerably its technical interest. I have read many parts of it; it seems very well done. I recommend it to those who teach the history of science, and also to teachers of physics. There are many portraits and good schemas of experiments. Boys and girls using this book will not risk filling their heads with loose scientific ideas under the guise of history, a very serious danger to which most of the elementary textbooks on the history of science are exposing them. In fact that danger has become so great that I can readily sympathise withe the scientific teachers who consider these historical books are sources of muddle-headed thinking and as positive nuisances. This reproach can not be made to Miss TURNER'S book; and on that account she deserves our warmest congratulations. The subject is divided as follows : 1. Early speculations ; 2. Electrostatics in the eighteenth century; 3. The electric current ; 4. Electro-magnetism; 5. The discovery of electro-magnetic induction; 6. Electrical measurements and some practical application; 7. Development of electrical theory; 8. Electrolysis; 9. The conduction of electricity through gases; 10. Electrical constitution of matter. CHARLES SINGER'S introduction is an excellent plea for our studies. G. S.

Van Vleck, John Hasbrouck. Quantum principles and line spectra. *Bulletin of the National Research Council of National Academy of Sciences*, Washington, D. C., 1926. ISIS

25. — CHEMISTRY, PHYSICO-CHEMISTRY, INDUSTRIAL CHEMISTRY.

Andrade, Edward Neville da Costa. The structure of the atom, Third edition, revised and enlarged. XVIII + 750 p., diagrams. London, G. BELL, 1927. ISIS

Reviewed in *Nature*, 119, 554-555, 1927.

Barclay, A. Catalogue of the collections in the Science Museum, South Kensington; with descriptive notes and illustrations. Chemistry. 76 p., 10 pl. London, H. M. Stationery Office, 1927 (*not seen*). ISIS

Bloch, Ernst. Einfluss und Schicksal der mechanistischen Theorien in der Chemie. Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 204-217, 1927. ISIS

Carbonelli, Giovanni. Sulle fonti storiche della chimica e dell'alchimia

in Italia tratte dallo spoglio dei manoscritti delle Biblioteche con speciale riguardo ai Codici 74 di Pavia e 1166 Laurenziano. Opera corredata di 242 reproduzioni fotografiche e due tavole f. t., XXII + 220 p. Roma, Istituto Nazionale medico farmacologico, 1925. ISIS

Reviewed by ALDO MIELI in *Arch. di storia d. scienza*, 6, 245-260, 1925 and E. O. VON LIPPMANN in *Isis*, 8, 465-476, 1926.

Claude, Georges. Air liquide. Oxygène. Azote. Gas rares. Deuxième édition révisée et mise à jour. Préface de M. D'ARSONVAL. 424 p., 166 fig. Paris, DUNOD, 1926. ISIS

Reviewed by E. MATHIAS, *Revue générale des Sciences*, 37, 550, 1926.

Darwin, C. G. Recent developments in atomic theory : being the twenty-eighth Robert Boyle Lecture delivered before the Junior Scientific Club of the University of Oxford on June 4, 1926. 15 p., 1 pl. London, Oxford University Press, 1927. ISIS

Davis, Tenney L. The Emerald Table of HERMES TRISMEGISTUS. Three Latin versions which were current among later alchemists. *Journal of Chemical Education*, 3, 863, 1926. ISIS

The Latin texts and English translations of the three versions are given, also an English translation of the commentary of HORTULANUS. One of the Latin versions contains the word *telesmus*, which suggests that it was derived from a Greek original; another, which does not contain this word, appears to be derived from the same original; the third appears to be derived from a different original. The questions arise — were there two Greek versions ? was there perhaps a version earlier than the Greek ? HOLMYARD, *Nature*, 112, 523, 1923, has found evidence which indicates that the Emerald Table was known to APOLLONIUS OF TYANA. It may perhaps have pertained to the earlier tradition from which the Alexandrian Hermetic school of the third century obtained its name, and, perhaps, its leading ideas. See RUSKA's work on same subject, *Isis*, 9, 375-7. T. L. D.

Evieux, Ernest. Contribution à l'étude des détersifs et du savon. *La parfumerie moderne*, Nov. 1925, 255-260. ISIS

Résumé de l'histoire du savon.

Freudenberg, Karl. The study of chemistry at Heidelberg : a glimpse of an historic home of research. *Journal of Chemical Education*, 4, 441-446, 1927. ISIS

Giua, Michele. Sviluppo storico dell' atomistica e della dottrina della valenza. (Estr. d. *Nuova enciclopedia di chimica*, vol. 12, P. 3a, diretta dal Pr. FELICE GARELLI, p. 459-635, 15 illustr.) Unione tipogr. editrice torinese, Torino, 1926. ISIS

Clair résumé, en ordre chronologique, de toutes les théories émises jusqu'à

l'heure actuelle sur l'atomisme depuis les premiers penseurs grecs dont nous connaissons la philosophie. Mais l'auteur est un peu bref pour tout ce qui a trait à la théorie actuelle de la structure de l'atome et ses vérifications expérimentales. L. G.

Loeb, Jacques. Die Eiweisskörper und die Theorie der kolloidalen Erscheinungen. Deutsch herausgegeben von CARL VAN EWEYK, Berlin. VIII + 298 S., 115 Abb. Berlin, SPRINGER, 1924. ISIS

Reviewed by RICHARD KUHN, *Die Naturwissenschaften*, Heft 35, 803-805, 1926.

Loeb, Jacques. La théorie des phénomènes colloïdaux. Traduction par H. MOUTON. 192 p., 58 fig. Paris, ALCAN, 1925. ISIS

Reviewed by F. VLÈS, *Revue générale des Sciences*, 38, 25-26, 1927.

Marshall, A. Histoire de l'acide picrique. *Moniteur scientif.*, 15, 114-115, 1926. ISIS

On a attribué à GLAUBER (1604-1668) la première préparation du picrate de potasse, mais la première indication précise est une note de PETER WOULFE en 1771. HAUSMANN en 1778 décrit quelques caractères de l'acide picrique, WELTER en 1799 montre ses propriétés explosives. FOURCROY, VAUQUELIN, CHEVREUL LIEBIG, LAURENT, STENHOUSE, l'étudient de 1805 à 1845. En 1849 GUINON l'introduit comme colorant dans l'industrie textile, et en 1869 seulement BOUCHET l'utilise pour le chargement des torpilles et obus. Ensuite délaissé, il reprend son importance d'explosif en 1885 avec TURPIN. L. L.

Paneth, Fritz. Ancient and modern alchemy. *Science*, 64, 409-417. 1926. ISIS

Speter, Max. Historiochemisches Allerlei. Studien zur Geschichte der Chemie. Festgabe E. O. v. LIPPMANN dargebracht, S. 218-227, 1927. ISIS

1. Merkwürdige Bleivergiftung; 2. Asbestfilter; 3. Thermostat; 4. MAYOW und LAVOISIER; 5. LAVOISIER und Lavoisien; 6. Antiphlogistisches; 7. « Entfremdwortetes » Chemie-Deutsch; 8. « Zeichen und Wunder »; 9. Aus ungarischen Handschriften des 16., 14., und 17. Jahrhunderts; 10. Aus einem Apparaten-Verzeichnis von 1853; 11. Holzekohle als Desodorans; 12. Runkel-Rüben-Commiss-Assessor; 13. Zum Einhundertjährigen Jubiläum der Rübenzucker-Industrie.

Stern, Rose. A short history of chemistry. With diagrams and portraits. Second large edition. 160 p. London, J. M. DENT, 1926. ISIS

First edition 1924.

Studien zur Geschichte der Chemie. Festgabe EDMUND O. v. LIPPMANN, zum siebzigsten Geburtstage dargebracht aus Nah und

Fern und im Auftrage der Deutschen Gesellschaft fur Geschichte der Medizin und der Naturwissenschaften. Herausgegeben von JULIUS RUSKA. VI + 242 S., mit einem Bildnis. Berlin, SPRINGER, 1927. (Mk. 19-50) ISIS

This beautiful volume, ably edited by JULIUS RUSKA, was dedicated to the master of chemico-historical studies, EDMUND O. VON LIPPMANN, to celebrate his seventieth anniversary. It is not necessary to explain to our readers the importance of Dr. VON LIPPMANN's work, the significance of his life, lighted and guided by an unalterable devotion to the history of science. His works have been reviewed in our pages as they appeared, (see e. g., *Isis*, 3, 302; 4, 548; 6, 116; 8, 379) and he wrote himself for us a very interesting article on Italian chemistry in the Middle Ages (vol. 8, 465-476, 1926.)

I very much regret that circumstances prevented me from contributing an essay to this volume. But I can do my share of this celebration — in a humbler way — by reviewing here the efforts of others and taking advantage of the occasion to express my deep admiration and sympathy to Dr. EDMUND O. v. LIPPMANN. May he be granted many more years of good work, for his sake but also for our own sake. We are already deeply indebted to him. May our debt increase !

I thought that the interests of scholars would be served best if the twenty two contributions included in this volume were reviewed in the Critical Bibliography, each one being classified in the section to which it belongs. It will suffice here to name the authors, it will be easy to find each one's contribution and eventually my criticism of it, by looking up his name in the index of the Twenty Second Critical Bibliography, at the end of this number of Isis. The names follow :

ERNST DARMSTAEDTER (München); ARTHUR JOHN HOPKINS (Amherst, Mass.); OTTO LAGERCRANTZ (Uppsala); GÜNTHER GOLDSCHMIDT (Königsberg i. Pr.); ERIC JOHN HOLMYARD (Bristol); JULIUS RUSKA (Heidelberg); EILHARD WIEDEMANN (Erlangen); CARLO ORESTE ZURETTI (Milan); CHRISTOPH FERCKEL (Dresden); PAUL WALDEN (Rostock); ALDO MIELI (Rome); ADOLF KISTNER (Karlsruhe); RUDOLPH ZAUNICK (Dresden); EDUARD FÄRBER (Geneva); TENNEY L. DAVIS (Cambridge, Mass.); GEORG LOCKEMANN (Berlin); KURT BRAUER (Cassel); HENRIK GUSTAV SÖDERBAUM (Stockholm); GÜNTHER BUGGE (Constance); PAUL DIERGART (Bonn); ERNST BLOCH (Brünn); MAX SPETER (Wehlen, Sachsen); ERNST VON LIPPMANN (Dresden).

The last and not the least impressive of the items contained in this volume, is a list of all Dr. VON LIPPMANN's works (18 in number, 1878 to 1925) and of all his papers dealing with the history of science (159 dating from 1886 to 1926) : the rich harvest of half a century of love and study.

GEORGE SARTON.

Waite, Arthur Edward. The secret tradition in alchemy : its development and records. XXII + 415 p. London, KEGAN PAUL, 1926. ISIS

Reviewed by E. J. HOLMYARD, *Nature*, 118, 869-870, 1926.

Walden, Paul. Zur Entwicklungsgeschichte der chemischen Zeichen.

Studien zur Geschichte der Chemie, Festgabe E. O. v. LIPPMANN dargebracht, S. 80-105, 1927. ISIS

This very elaborate study deals less with alchemical symbols — of which there were many thousands (some 46 for copper, 58 for mercury, etc. !) than with the more scientific symbols used for example, by ANDR. LIBAVIUS, NIC. LÉMERY, H. BOERHAAVE and later chemists. The subject is subdivided as follows : Chemische Lehrbücher vor 1800 und alchemistische Zeichen; Medizinisch-chemische und praktisch-chemische Werke; Experimentelle wissenschaftliche Forschung; Begin der Affinitätsmessungen (Verwandtschaftstabellen); Beginn der quantitativen Chemie : « Zahl, Natur und Verhältnis »; DALTON's Atomtheorie. BERZELIUS und die chemischen Proportionen; Geometrische und stereometrische Symbole; Eingliederung der Elektrizität und der Elektronen in die chemischen Symbole; Schlussbemerkungen. G. S.

Winderlich, Rudolf. Chemie und Kultur. VI + 139 S., 8 Abb. in Text, 8 Taf. Leipzig, LEOPOLD VOSS, 1927. ISIS

26. — TECHNOLOGY.

(For mining, see 32. *geology; for industrial chemistry,* 25. *chemistry. See also arts and crafts, under* 45.*)*

Albion, Robert Greenhalgh. Forests and sea power : the timber problem of the royal navy, 1652-1862. (*Harvard Economic Studies*, vol. 29). XV + 485 p. Cambridge, Mass. Harvard University Press, 1926. ISIS

Reviewed by ELEANOR LOUISA LORD, *American Historical Review*, 32, 590-591, 1927.

Barman, Christian. The Bridge : a chapter in the history of building. XVII+249 p. London, John Lane, The Bodley Head Ltd., 1926. ISIS

Bragg, Sir William. Old trades and new knowledge : six lectures delivered before a « Juvenile Auditory » at the Royal Institution, Christmas 1925. XII+266 p., 42 pl. London, G. BELL, 1926. ISIS

Reviewed in *Nature*, 119, 272-273, 1927.

Christy, Miller. The Bryant and May museum of firemaking appliances. Compiled, with an introduction and notes. VIII+255 p. London, Simpkin Marshall, 1926. ISIS

Clowes, G. S. Laird. Ships of early explorers. *The Geographical Journal*, 69, 216-235, 10 figs., 1927. ISIS

Starting with the expedition sent out by the great Egyptian Queen HATSHEPSUT to the land of Punt about 1600 B. C., and touching briefly upon

the Greek and Roman ships (of which very little detail has come down to us), the author describes more fully a ship similar to that used by ERIC THE RED in 1000 A. D. Turning next to the descriptions by MARCO POLO of the ships used in the Indian Ocean and Persian Gulf, he notes the distinguishing features which characterize the ships of the explorers particularly from the voyages of COLUMBUS down to those of Capt. JAMES COOK in the latter part of the eighteenth century. J. K. W.

Dixon, William Hepworth. The match industry, its origin and development. (Pitman's Common Commodities and Industries). x+150 p London, PITMAN, 1925. ISIS

Feldhaus, F. M. Tage der Technik, 1927. 365 Bl., 365 Abb. München, R. OLDENBOURG, 1927. (M. 5). ISIS

I have already said how good this calendar was. The author's personality is a sufficient guarantee of accuracy. The contents are very varied and interesting. Such a calendar will give its owner a daily lesson; even professional historians of science will find in it enough new items to stimulate their curiosity. G. S.

Forward, E. A. The early history of the cylinder boring machine. *Transactions of the Newcomen Society*, 5, 24-38, pl. v to VIII, London, 1926. ISIS

« A complete history of machine tools has yet to be written, although the development of certain tools, such as the lathe, has come under the notice of the engineering historian. One machine of importance, which has hitherto received scant attention, is the cylinder boring machine, which is not only notable as being the first large machine tool in which the copying principle was carried out, but also because of the part it played in contributing to the development of the steam engine. »

Greener, C. E. Gun-making handicrafts. *Transactions of the Newcomen Society*, 5, 57-71, pl. XIV to XVI, London, 1926. ISIS

Hall, J. W. Notes on Coalbrookdale, and the DARBYS. *Transactions of the Newcomen Society*, 5, 1-8, 1 pl., 1926. ISIS

Hamilton, Edward Pierce. Some windmills of Cape Cod. *Transactions of the Newcomen Society*, 5, 39-44, pl. IX to X, London, 1926. ISIS

Hössle, Friedrich von. Histoire de quelques anciennes papeteries françaises. *Papyrus*, 7e année, p. 337-340, 412-413, 485-487, Paris 1926. ISIS

Reproduction d'une étude publiée dans *Centralblatt für die Papierindustrie*, et qui est le fruit de près de trente années de recherches. L'industrie papetière semble avoir été importée en France vers 1300 par les papetiers espagnols et piémontais. Après un rapide préambule historique appuyé sur de nombreuses références, l'auteur parle des précautions indiquées par les anciens papetiers pour la réussite de leur art. Il étudie ensuite les formats en usage en France

et quelques filigranes qui y ont été fabriqués. Des dessins nombreux et des reproductions photographiques illustrent cette étude qui reste à suivre. L. L.

Kistner, Adolf. Die Schwarzwälder Uhr. (Heimatblätter « Vom Bodensee zum Main », 31). 164 S. Karlsruhe, C. F. MÜLLER, 1927. ISIS

Reviewed by J. RUSKA, *Mitt. zur Geschichte der Med.*, 26, 121, 1927.

Lippmann, Edmund O. von. Zur Geschichte des Wortes « Technologie ». *Chemiker-Zeitung*, Nr. 20, S. 189, 1927. ISIS

« Entgegen einer bei den Chemikern vielverbreiteten Annahme bildet der Ausdruck « Technologie » keinen Bestandteil des klassischen Sprachschatzes der Antike, tritt vielmehr nicht vor den ersten Jahrhunderten unserer Zeitrechnung auf; er bedeutet auch im Spätgriechischen keineswegs, wie heute, den Logos der Techne, d. h. eine Darstellung der Technik (im Sinne von Kunst, Kunstfertigkeit), sondern umgekehrt die Techne des Logos, d. h. die Technik (Kunst, Kunstfertigkeit) der Darstellung, mag diese sich nun in prozaischem oder poetischem Gewande an irgendein Gebiet heranwagen. » The word technology in its modern acception was not introduced until 1777, by the Göttingen professor JOH. BECKMANN, one of the greatest historians of technology. G. S.

(Newcomen Society). Subject list of books and pamphlets relating to the history of technology, published during the period 1920-1925. *Transactions of the Newcomen Society*, 5, 100-124, London, 1926. ISIS

Robertson, Charles Grant. Humanism and technology and other essays. By Sir THOMAS H. HOLLAND, C. H. DESCH, Sir HENRY FOWLER, F. W. BURTSALL, W. CRAMP. 91 p. London, Oxford, University Press, 1924. ISIS

Rowatt, Thomas. Notes on original models of the Eddystone lighthouse. *Transactions of the Newcomen Society*, 5, 15-23, pl. II to IV, London, 1926. ISIS

Ungerer, Alfred. Les horloges d'édifice. Paris, GAUTHIER-VILLARS, 1926. ISIS

Vidal, L. et Bouvier, R. Le papier de Khanbaligh et quelques autres anciens papiers asiatiques. *Journal Asiatique*, 206, 159-170, 3 pl., 1925. ISIS

Walton, Frederick. The infancy and development of linoleum floorcloth. 56 p. London, SIMPKIN MARSHALL, 1925. ISIS

IV. BIOLOGICAL SCIENCES
(Knowledge of organic nature).

27. — BIOLOGY
(*Generalities*, « *Natural History* »).

Berg, Lev Semenovich. Nomogenesis : or evolution determined by law. Translated from the Russian by J. N. ROSTOVTSEW. XVIII + 477 p. London, CONSTABLE, 1926. ISIS

Reviewed by HENRY FAIRFIELD OSBORN, *Nature*, 118, 617-618, 1926.

Bose, Sir Jagadis Chunder. Réactions de la matière vivante et non vivante. Traduit par ED. MONOD-HERZEN. 188 p. Paris, GAUTHIER-VILLARS, 1926. ISIS

Hommel, Hildebrecht. Moderne und Hippokratische Vererbungstheorien. *Archiv für Geschichte der Medizin*, 19, 105-122, 1927. ISIS

Machin, Alfred. The ascent of man by means of natural selection. XX + 325 p. London, LONGMANS GREEN, 1925. ISIS

Reviewed by B. MALINOWSKI, *Nature* 118, 506-509, 1926.

McClung, C. E. The unity of life. *Science*, 64, 561-569, 1926. ISIS

Morgan, Thomas Hunt. The theory of the gene. (Yale University, Mrs. Hepsa Ely Silliman Memorial Lectures). XVI + 343 p. New Haven, Yale University Press, 1926. ISIS

Reviewed by R. C. PUNNETT, *Nature*, 118, 435-437, 1926.

Nordenskiöld, (Nils) Erik. Die Geschichte der Biologie : ein Überblick. Deutsch von GUIDO SCHNEIDER. VIII + 648 p. Jena, GUSTAV FISCHER, 1926. ISIS

Osborn, Henry Fairfield. Evolution and religion in education : polemics of the fundamentalist controversy of 1922 to 1926. XIV + 240 p. New York, SCRIBNER'S, 1926. ISIS

Reviewed by J. C. H., *Nature*, 118, 652, 1926.

Rignano, Eugenio. Man not a machine : a study of the finalistic aspects of life. (Psyche miniatures : General series, No. 3). 77 p. London, KEGAN PAUL, 1926. ISIS

Varigny, Henry De. Essais sur la mort. La mort et la biologie. 309 p. Paris, ALCAN, 1926. ISIS

Vernadsky, W. Sur la multiplication des organismes et son rôle dans le mécanisme de la biosphère. *Revue gén. des Sciences*, 37, 661-668, 700-708, 1926. ISIS

Wheeler, William Morton. Emergent evolution and the social. Address given at the Sixth International Congress of Philosophy. Cambridge, Mass., September 14, 1926. *Science*, 64, 433-440, 1926. ISIS

28. — BOTANY.

(Agronomy, phytopathology, palaeobotany.)

Bose, Sir Jagadis Chunder. Carbon assimilation by plants. *Scientia*, 40, 143-152, 1926; trad. franç., supplém., 51-60. ISIS

Exposé succinct des travaux de l'auteur sur la physiologie de la photosynthèse (Voir *Isis*, 7, 291). L. G.

Bose, Sir Jagadis Chunder. The nervous mechanism of plants. XIX + 224 p. London, LONGMANS GREEN, 1926. ISIS

Reviewed in *Nature*, 118, 654-655, 1926.

Bose, Sir Jagadis Chunder. La physiologie de la photosynthèse. Traduit par J. et M. L. DUFRÉNOY, avec préface de M. L. MANGIN. XXX + 302 p., avec figures. Paris, GAUTHIER-VILLARS, 1927. ISIS

Combes, Raoul. La vie de la cellule végétale. 216 p., 16 fig. *Collection Armand Colin*, COLIN, Paris, 1927. ISIS

« Dans cette Vie de la cellule végétale, nous examinerons l'état actuel de nos connaissances sur la matière vivante des végétaux. Considérant successivement ses différentes parties : protoplasma, noyau, plastes, mitochondries, nous en étudierons la constitution morphologique, l'origine, le rôle physiologique et la composition chimique. Prenant ensuite en particulier chaque espèce chimique, ou chaque groupement d'espèces chimiques quand cela paraît préférable au point de vue physiologique, nous en indiquerons la structure, les caractères les plus importants, en insistant sur ceux qui peuvent être employés en histochimie, puis l'origine physiologique ».

Craven, Avery Odelle. Soil exhaustion as a factor in the agricultural history of Virginia and Maryland, 1606-1860. (*University of Illinois Studies in the Social Sciences*, vol. 13, no. 1). 179 p. Urbana, University Illinois, 1926. ISIS

Reviewed by THOMAS J. WERTENBAKER, *American Historical Review*, 32. 610-611, 1927.

Harvey-Gibson, Robert John. A short history of botany. vii + 96 p., 2 pl. London, J. M. DENT, 1926. ISIS

Hunter, Herbert. The barley crop. A record of some recent investigations. VIII + 166 p., diagrams. London, BENN, 1926. ISIS

Reviewed by A. B. B. in *Nature*, 118, 871, 1926.

Krause, K. Über den giftigen Honig des pontischen Kleinasien. *Die Naturwissenschaften*, Heft 44, 976-978, 1926. ISIS

This poisoned honey is first mentioned in XENOPHON's Anabasis. I quote the conclusion : « Interessant ist es, dass auch schon von alten Schriftstellern die pontischen Alpenrosen als Erreger des Tollhonigs angegeben werden. Bereits PLINIUS nennt den Rhododendron als solchen, und wenn späteren Autoren Irrtümer unterlaufen sind, so hängt dies z. T. damit zusammen, dass im Altertum unter « Rhododendron » fast immer der Oleander, Nerium oleander, verstanden wurde. Auch die oben erwähnte Angabe VICTOR HEHNS ist so zu erklären. Immerhin ist es beachtenswert, dass man schon im Altertum die richtige Auffassung von der Entstehung des giftigen Honigs hatte und dass die spätere, bis in die jüngste Literatur zu verfolgende Verwirrung erst durch neuere Autoren geschaffen wurde. Leider weiss man noch nichts Genaueres über die chemische Natur des Giftstoffes : hoffentlich gelingt es, auch diese bald aufzuklären, nachdem über die pflanzlichen Erreger keine Zweifel mehr bestehen können. » G. S.

Leclerc, Henri. Les fruits de France, historique, diététique et thérapeutique, 274 p. Paris, MASSON, 1925. ISIS

Marzell, Heinrich. Das Eisenkraut (Verbena officinalis) als Zauberpflanze. *Der Naturforscher*, 3, 419-425, mit 1 Abb., 1926. ISIS

Marzell, Heinrich. Die Orchideen in der sexuellen Volkskunde. *Geschlecht und Gesellschaft*, 14, 211-223, 1926. ISIS

Mennell, Robert O. Tea, an historical sketch. 63 p., portr., facsims. London, WILSON, 1926. ISIS

(**Palladin, Vladimir I.**) PALLADIN's plant physiology. Authorized edition, in English, based on the German translation of the sixth Russian edition and on the seventh Russian edition (1914), of the Text-book of plant physiology. With additions and editorial notes by BURTON EDWARD LIVINGSTON. Third American edition, with a biographic note, chapter summaries and other additions by the editor. XXXV + 360 p. Philadelphia, Pa., P. BLAKISTON's Son, 1926. ISIS

Rouhier, Alexandre. Les plantes divinatoires. 32 p., avec fig. Paris, DOIN, 1927. ISIS

Rouhier, Alexandre. La plante qui fait les yeux émerveillés, le peyotl. (Echinocactus Williamsi Lem.) XII + 371 p., illus., map. Préface d'EM. PERROT. Paris, DOIN, 1927. ISIS

Safford, William E. The potato of romance and of reality. Reprinted slightly abridged, from the *Journal of Heredity*, Vol. 16, No. 4, April, 1925. *Annual Report for 1925 of Smithsonian Institution*, Washington, D. C., 509-532, 12 plates, 1926. ISIS

« I. The statement that the potato was found growing in North America by the English colonists and carried thence to England, for which JOHN GERARD is responsible, is not true; the openawk of the Algonquin Indians with which it was confused by early writers is a tuberbearing climber of the bean family, the *Glycine apios* of LINNAEUS.

« II. The story of its introduction into Ireland by Sir WALTER RALEIGH is a myth invented in 1693, more than a hundred years after the return of his ill-fated colony from Roanoke Island. The DRAKE myth which was substituted for it is equally without foundation.

« III. The cultivation of *Solanum tuberosum* in pre-Columbian times extended from southern Chile along the Andes and the high-lands of Peru and Bolivia to the mountains of Ecuador and Colombia, but did not reach the shore of the Caribbean Sea. The « potatoes » encountered on the shore and islands of that sea by early navigators were sweet potatoes.

« IV. It was carried to Europe from South America by the Spaniards soon after 1580, thence to Italy, and in 1588 reached CHARLES L'ECLUSE, keeper of the botanical garden at Vienna. It was cultivated as a field crop in Ireland before 1663. It did not reach the United States until 1719, when it was brought from Ireland by immigrants who settled at Londonderry, N. H. The Irish potato reached the West Indies after 1700, and was first propagated from seed brought from the British Isles.

« V. Dried specimens and representations of potatoes in terra cotta found in prehistoric tombs show that excellent varieties had been developed before the discovery of America.

« VI. Numerous species of tuber-bearing Solanums have been collected in various parts of America both north and south of the equator, but *Solanum tuberosum* itself has never been found in its wild state. Evidence as to the place of its origin points to the central Andean region where conditions of soil and climate are such that a number of plants of other families have developed tubers of a similar nature. »

29. — ZOOLOGY.

Armbruster, Ludwig. Der Bienenstand als völkerkundliches Denkmal. (*Bücherei f. Bienenkunde*, Bd. 8). 152 S., 61 Abb., 1 Karte. Neumünster i. Holstein, K. WACHHOLTZ, 1926. ISIS

Bouvier, Eugène Louis. Le communisme chez les insectes. (*Bibliothèque de Philosophie scientifique*). 291 p. Paris, FLAMMARION, 1926. ISIS

Reviewed by E. ROUBAUD, *Revue gén. des Sciences*, 37, 182-183, 1927.

Dahl, Friedrich. Zur Geschichte der Zoologie. Von ARISTOTELES bis

PLINIUS. (Eine historische Studie). *Sitz.-Ber. d. Ges. naturforschender Freunde* in Berlin, S. 62-104, 1924. ISIS

History of the study of spiders.

Devaux, Emile. Des animaux en état de jeune chronique et le mécanisme de la régénération et de la métamorphose. *Revue gén. des Sciences*, 37, 669-674, 1926. ISIS

Digby, Bassett. The mammoth and mammoth-hunting in north-east Siberia. With photographs and a map. London, WITHERBY, 1926. ISIS

Gudger, E. W. Live fishes impacted in food and air passages of man. *Archives of pathology and laboratory medicine*, 2, 355-375, 1926. ISIS

History of this curious subject traced back to GILBERT COGNATUS (COUSIN), Narrationum sylva, Basel 1567, with bibliography. Some twenty cases distributed in twelve countries. G. S.

Gudger, E. W. Fishing with the cormorant. I. In China. *The American Naturalist*, 60, 5-41, 16 fig., 1926. ISIS

Strangely enough there is no reference to cormorant fishing in MARCO POLO; the earliest western author to speak of it being ODORIC OF PORDENONE. According to B. LAUFER it is probable that this special form of fishing was developed in China during the Sung dynasty and in Japan possibly earlier (end of VIth cent.)This would then be a Japanese invention ? The author retraces the history of European knowledge on the subject, and reproduces some of the early printed illustrations : the very earliest appeared in JOHAN NIEUHOF. Het gezandschap der Neerlandtsche Oost-Indische Compagnie, Amsterdam (1665). G. S.

Heilmann, Gerhard. The origin of birds. With two plates in colour and 140 photographs and textfigures from drawings by the author. VII + 208 p., illus., plates. London, WITHERBY, 1926. ISIS

Horn, Walther. Über den Verbleib der entomologischen Sammlungen der Welt (Ein Beitrag zur Geschichte der Entomo-Museologie). Supplementa Entomologica. Nr. 12,133 S. Berlin-Dahlem, Entomol. National-Museum, 1926. ISIS

Joubin, Louis. Les métamorphoses des animaux marins. 272 p., 71 fig., (*Bibl. de philos. scientifique*), Paris, E. FLAMMARION, 1926. ISIS

Exposé clair, fait en suivant l'ordre zoologique, de l'état actuel de nos connaissances de l'évolution larvaire des animaux marins. L. G.

Kyle, Harry M. The biology of fishes. XVI + 396 p., 17 pl. London, SIDGWICK and JACKSON, 1926. ISIS

Laufer, Berthold. Ostrich egg-shell cups of Mesopotamia and the ostrich in ancient and modern times. 51 p., 9 pl., 10 fig. Field Museum of Natural History, *Anthropology*, Leaflet 23, Chicago, 1926. ISIS

A most interesting review of our knowledge on ostrichs in the past and the present apropos of egg-shell cups from a grave at Kish, Mesopotamia (c. 3000 B. C.), now in the Field Museum. Contents: The ostrich in Mesopotamia; the ostrich in Palestina, Syria, and Arabia; the ostrich in ancient Egypt; the ostrich in the traditions of the ancients; the ostrich in the records and monuments of the Chinese; the ostrich in Africa; the domestication of the ostrich; the ostrich in America; bibliographical references. This learned booklet is plesantly written and beautifully illustrated. It contains, for example, good images of the ostriches represented on the tomb of the emperor KAO TSUNG (VIIth century). These Chinese representations « belong to the best ever executed and known in the history of art, and are far superior to any representations of the bird in Assyria, Egypt, and Greece, which are conventional and stiff. The Chinese ostriches are correct in their accentuation of motion and action. » « The ostrich is the most recent of all domesticated animals, and its complete domestication was accomplished by the white farmers of South Africa as late as the latter part of the nineteenth century. It is the only domestication that occured in modern times, and the only one to which, with certain reservations, our own civilization may lay claim; all other domestications of large mammals and birds were brought about ages ago, either in Asia or Africa, and were simply adopted by the nations of Europe. »

G. S.

Lefebvre des Noëttes, Commandant. La force motrice animale à travers les âges. Deuxième édition. VIII + 132 p., 217 fig. on 80 pl. Paris, BERGER-LEVRAULT, 1924. ISIS

Very important review by PAUL PELLIOT, *T'oung Pao*, 24, 256-268, 1926; see also *Journal des savants*, 229-232, 1924.

Lefebvre des Noëttes, Commandant. La force motrice animale à travers les âges et la question de l'esclavage. L'*Anthropologie*, 36, 297-308, 1926. ISIS

The author believes that the importance of the history of the utilization of the motive power of animals has not been recognized by students of economic and social history. He argues that one of the great weaknesses in the economic life of antiquity was a failure to make adequate use of this power, owing to inadequate harness, insufficient protection for the animals' feet, etc. This led to the employment of human beings — slaves — to supply the motive force which animals might otherwise have furnished. With the middle ages came the invention of more efficient methods of employing animal power and the consequent abandonment of slavery. The origins of slavery in the New World may in part be attributed to the early lack of animals for work and transport. A suggestive and original theory but one requiring further proof.

J.K.W.

Moodie, Roy L. Recent advances in palaeopathology. *Annals of Medical History*, 8, 327-330, 1926. ISIS

Moodie, Roy L. Studies in paleopathology XVII : an alveolar abscess in the mandible of an extinct mammal. *Annals of Medical History*, 8, 280-283, 1926. ISIS

Moodie, Roy L. Studies in paleopathology XIX. Pleistocene examples of traumatic osteomyelitis. *Annals of Medical History*, 8, 413-418, 1926. ISIS

Moodie, Roy L. Vertebral lesions in the sabre-tooth, pleistocene of California, resembling the so-called myositis ossificans progressiva, compared with certain ossifications in the dinosaurs. (Studies in paleopathology, XX). *Annals of Medical History*, 9, 91-102, 11 fig., 1927. ISIS

Roule, Louis. Les poissons et le monde vivant des eaux; études ichthyologiques. Tome I. Les formes et les attitudes. 355 p, 52 fig. dans le texte et 16 planches en trichromie., d'après les aquarelles d'ANGEL. Paris, DELAGRAVE, 1926. ISIS

Schulze, Franz Eilhard (1840-1921); **Kükenthal, W.; Heider, K.; Kuhlgatz, Th.** Nomenclator animalium generum et subgenerum. Bd. I, Lief. 1-3. Im Auftrage der Preuss. Akad. der Wiss. zu Berlin. p. 1-276. Berlin, Verlag der Preuss. Akad. der Wiss., 1926. ISIS

Wetmore, Alexandre. The migrations of birds. (Lowell Institute lectures delivered in Nov. 1925). VIII + 217 p., pl., maps. Harvard University Press, 1926. ISIS

Wheeler, W. Morton. Les sociétés d'insectes. Leur origine, leur évolution. XII + 468 p., 61 fig. G. DOIN + Cie, Paris, 1926. ISIS

Isis a déjà signalé plusieurs fois les travaux de W. M. WHEELER sur les insectes (voir t. 4, 214; 6, 578-80; 9,445). Et voici que vient de paraître un livre important « fruit précieux des échanges universitaires franco-américains », dit MAURICE CAULLERY dans sa préface. Ce livre est en effet la reproduction de leçons faites de mars à mai 1925 à l'Université de Paris par WHEELER, envoyé par l'université Harvard comme exchange-professor. L'auteur suppose connues les données classiques sur les sociétés d'insectes, et se basant sur elles, sur les acquisitions les plus récentes de la recherche, sur les beaux résultats qu'il a rapportés lui-même de ses observations en Guyanne et en Panama, il cherche à reconstituer l'origine et les stades successifs de la formation de ces sociétés (abeilles, fourmis, termites), et de leurs associés et parasites. Résumer un tel livre est impossible : c'est un instrument de travail extrèmement précieux, non seulement pour le biologiste, mais pour le sociologue, car WHEELER ne se prive pas d'établir des comparaisons entre les insectes sociaux et l'homme. 40 pp. de bibliographie; index des auteurs et index des matières. L. G.

V. SCIENCES OF THE EARTH

(Implying knowledge of both organic and inorganic nature).

30. — GEODESY.

Soulier, P. Le relief de la terre, ses origines, ses lois, son évolution. x + 432 p., 68 fig., 3 pl. Paris, F. ALCAN, 1925. ISIS

Reviewed by F. KAISIN in *Revue des questions scientifiques*, 20,04,1926, 542-46.

31. — GEOGRAPHY AND OCEANOGRAPHY.

Adams, Edward Dean. America and Americans. The name and its significance. 56 p., 8 illus. New York, BARTLETT ORR Press, 1926. ISIS

On the origin of the name « America ». J. K. W.

Andrews, Michael C. The British Isles in the nautical charts of the XIVth and XVth centuries. *The Geographical Journal*, 68, p. 474-481, 1 pl., 9 figs., 1926. ISIS

It is impossible to trace the evolution of the shores of the Mediterranean as represented on the portolan charts. The earliest of these charts show the Mediterranean coast with astonishing accuracy. The Atlantic coasts of Europe and particularly of the British Isles and Scandinavia, on the other hand, are less accurately drawn. In the case of the British Isles, ANDREWS has been able to follow the progressive development of four types of maps during the fourteenth and fifteenth centuries; (1) the early Genoese; (2) the Venetian; (3) the Catalan, which became the model for the majority of the existing maps dating from the fifteenth century; and (4) a later group consisting of eight maps of uncertain origin. J. K. W.

Andrews, Michael C. The boundary between Scotland and England in the Portolan charts. *Proceedings of the Society of Antiquaries of Scotland*, vol. 12, fifth series, p. 36-66, 1926. ISIS

Although the portolan charts in general show very little detail in the interior of land areas and almost never indicate boundaries an exception was made for the border between Scotland and England. ANDREWS traces the growth of a conventional representation of this boundary from a preliminary stage when it was shown as a mountain with two great rivers flowing east and west to a subsequent stage when the headwaters of the two rivers were joined so that a continuous passage was depicted from sea to sea ANDREWS demonstrates that the persistent practice of separating Scotland and England on the sixteenth century charts was usually due to copying earlier charts and does not necessarily represent a conscious belief in an actual separation of these two parts of Great Britain. J. K. W.

Andrews, Michael C. The map of Ireland A. D. 1300-1700. Reprinted

from the *Proceedings of the Belfast Natural History and Philosophical Society*, for the session 1923-1924, 29 p., 6 pl. ISIS

After a brief description of the somewhat crude representations of Ireland on the Ptolemaic maps and the mappae mundi of the middle ages, the author discusses in some detail the island as shown on the marine charts of the 14-16th centuries, and on printed and MS maps of the 16th and 17th centuries. From a comparative examination of about 250 marine charts he finds it ' possible to distinguish six typical representations. ' Owing to ' a considerable and direct trade with Ireland in the century (13th) immediately preceding our earliest maps ' Italian map makers ' had ample facilities for obtaining geographical information. ' Seven typical forms can be distinguished among the printed maps of the 17th century. The first detailed survey; (the work being ' done entirely by the chain ') was carried out under Dr. WILLIAM PETTY in 1655-1656 by a staff of 1000 persons. As late as 1851 PETTY's maps ' constituted the legal record of the title on which half the land of Ireland was held '. His general map reveals a ' distinctly modern and appreciably correct form. ' J. K. W.

Andrews, Michael C. Scotland in the Portolan charts. *The Scottish Geographical Magazine*, 42, 129-153, 193-213, 2 plates, 24 figs., 1926. ISIS

This detailed study of Scotland as shown on the portolan charts of the fourteenth, fifteenth and sixteenth centuries, reveals the fact that during the first 200 years four types were developed. In the sixteenth century we have no less than nine types. The author points out that prior to the middle of the sixteenth century alterations in the outline of Scotland do not mean actual advances in geographical knowledge, but that after that date attempts were made at modernizing these outlines and at bringing the place names up to date, attempts which foreshadow the more accurate work of the Dutch cartographers of the seventeenth century. J. K. W.

Barker, W. H. The history of cartography. *The Journal of the Manchester Geographical Society*, 39-40, Parts I-IV, 1-17, 1925. ISIS

Brief but useful outline of the history of cartography compiled on the occasion of an exhibition of maps held in 1923 under the auspices of the University of Manchester and the Manchester Geographical Society (*Isis*, 8, 626). Accompanied by photographic facsimiles of medieval mappae mundi and of a typical portolan chart, together with an ingenious comparative diagram of the world as shown on the maps of PTOLEMY, BEHAIM, MERCATOR, HONDIUS, and on modern maps. J.K. W.

(Belgium, Geography). Exposition de la cartographie belge aux XVI^e^ XVII^e^ et XVIII^e^ siècles, organisée au Musée Plantin-Moretus à l'occasion du Cinquantenaire de la Société Royale de Géographie d'Anvers. LX + 59 p., 28 pl. Antwerp, 1926. ISIS

A magnificently illustrated catalogue of an exhibition of books, atlases, and maps, preceded by biographical and bibliographical notes on the outstanding Belgian cartographers of the sixteenth, seventeenth and eighteenth centuries. J. K. W.

Brawer, A. J. Le progrès et les changements dans la géographie de la Palestine depuis 1914. Congrès International de Géographie, Le Caire, avril 1925, Compte rendu des travaux de la cinquième section, V., 37-45, 1 map, 1926. ISIS

The World War, followed by the establishment of the British Mandate and the Jewish colonization of Palestine has stimulated intensive studies of the geography of that country. Important topographical surveys have been made and large scale maps published by the British and Germans. New geological, meteorological and demographic data have been gathered. The results of this activity are briefly stated in this article. J. K. W.

Bujak, Franciszek. Studja geograficzno-historyczne. XI + 299 p. Krakow, Druk W. L. ANCZYCA i SPÓLKI, 1925. ISIS

A series of monographs on geographical studies in Poland during and since the fifteenth century. J. K. W.

Colin, Elicio (*editor*). XXXV^e^ Bibliographie géographique 1925, publiée par l'Association de Géographes français, avec la collaboration de : l'American Geographical Society, du Comitato Geografico Nazionale Italiano, de la Royal Geographical Society of London, et avec le concours de la Fédération des Sociétés françaises de Sciences Naturelles. 546 p. Paris, ARMAND COLIN, 1926. ISIS

La Partie générale (Histoire de la géographie et géographie historique) couvre 40 p. et comprend 231 notes dont certaines sont très documentées et assez étendues. Excellente bibliographie. G. S.

Congrès International de Géographie. Le Caire, avril 1925, Compte rendu publié par le secrétaire général du congrès. Tome 5, 214 p. Le Caire, Imprimerie de l'Institut français d'Archéologie Orientale du Caire pour la Société Royale de Géographie d'Egypte. 1926. ISIS

This volume contains the procès-verbaux of the section of the Congress devoted to the history of geography and historical geography, together with the texts of many of the communications. (see *Isis*, 8, 625, 1926). Among the latter, five are reviewed in the present bibliography (See following names in index : BRAWER; ROSSI; PELLATI; S. DETOLE; FURLANI). Besides these, the following deserve particular mention as of interest to the historian of science : (1) PAUL PELLIOT, Les anciens rapports entre l'Egypte et l'Extrême Orient, p. 21-22. (2) Commandant VIVIELLE, Note sur une carte manuscrite du voyage de PAUL LUCAS aux cataractes du Nil dessinée par JEAN-BAPTISTE NOLIN (1703-1704), p. 67-75, 3 illus. (3) Commandant VIVIELLE. Note sur la carte manuscrite des déserts de la Basse-Thébaïde, par le R. P. SICARD (1716), p. 76-79, 2 illus. (4) C. DE LA RONCIÈRE, La carte de CHRISTOPHE COLOMB, p. 79-83. (5) R. P. ALEXIS MALLON, La géographie de l'Exode; 84-89. (6) MUSTAFA AMER, The ancient trans-peninsular routes of Arabia, p. 126-140, 1 map. J. K. W.

Dehérain, Henri, (Lecture at the Ciesing session of the 58th Congress

of Learned Societies, Paris. April 18, 1925.) *Comité des travaux historiques et scientifiques, Bulletin de la section de géographie*, 40, p. XLVI-LX, 1925. ISIS

On geographical contributions of French travelers, consuls, and officers in the army, navy, and merchant marine in the Levant during the 17th-19th centuries. J. K. W.

De l'Isle, Rollet. Historic notes on the difference of longitude between Paris and Greenwich. *The Hydrographic Review*, 3, 177-181, 1926. ISIS

The Paris observatory was established in 1667; that at Greenwich in 1675. In the eighteenth century the difference in longitude between them was calculated by observing eclipses and lunar occultations; later by tying in the French triangulation with the British; during the latter part of the nineteenth century telegraph signals were used and in 1920 chronometers were transported on airplanes between the two stations. J. K. W.

Dept, Gaston G. L'Étude et l'enseignement de la géographie aux États-Unis. *Bulletin de la Société royale belge de géographie*, 119-132, 1926. ISIS

Furlani, Giuseppe. Le carte dell' Adriatico presso TOLOMEO e AL-IDRÎSÎ. Congrès International de Géographie, Le Caire, avril 1925. Compte rendu des travaux de la cinquième section, V., 196-206, 2 illus., 1926. ISIS

A comparison of the east coast of the Adriatic as drawn in the Ptolemaic maps and in the maps of IDRÎSÎ shows that the latter based this part of his map solely on itineraries and other data more recent than PTOLEMY. FURLANI believes that IDRÎSÎ probably used later sources of this sort so far as possible, drawing on PTOLEMY only where he considered that insufficient detail was to be gleaned from the available later data. J. K. W.

Goode, J. Paul. The map as a record of progress in geography. *Annals of the Association of American Geographers*, 17, p. 1-14, 1927. ISIS

Hayes, J. Gordon. The exploration of Antarctica. *The Journal of the Manchester Geographical Society*, 39-40, Parts I-IV, 18-48, 1925. ISIS

Not a history of the exploration of Antarctica, but, rather, an analysis of the results hitherto accomplished and of the problems still waiting solution. Following the example of STEFANNSON for the Arctic, the author has drawn a diagram showing the areas of relative inaccessibility in the Antarctic. See the *Georgaphical Review*, 16, 320-321, 1926. J. K. W.

Hermannsson, Halldór. Two cartographers. GUDBRANDUR THORLÁKSSON and THÓRDUR THORLÁKSSON. 44 p., 11 plates. Ithaca, New York, Cornell University Library, 1926. ISIS

The two bishops, GUDBRANDUR (1542-1627) and THÓRDUR (1637-1697) who are the subject of this biographical note constructed maps of Iceland, that surpassed in quality those of any of their predecessors. See *Geographical Review*, 17, p. 334-335, 1927. J. K. W.

Holm, Gustav. De Islandske Kursforskrifters Svalbarde. *Meddelelser om Grönland*, 59, p. 277-297, 1925. ISIS

The recent action taken by the Norwegian government in naming Spitzbergen and Bear Island after Svalbard, a polar land described in early Icelandic writings, has led HOLM to a discussion of the actual position of the original Svalbard. On the basis of an examination of the sagas as well as of later maps he places it on the east coast of Greenland in the vicinity of Scoresby Sound. See also : HOLM's article of same title, with English summary, *Geogr. Tidsskrift*, 29, 1926, p. 3-19; and FINNUR JONSSON: « Svalbarde », with English summary, *ibid.*, 29, 1926, p. 80-90. J. K. W.

Humphreys, Arthur Lee. Old decorative maps and charts. With illustrations from engravings in the Macpherson collection, and a Catalogue of the atlases, etc., in the collection, by HENRY STEVENS. VIII + XLIII + 51 p., 79 pl., incl. maps London, HALTON and TRUSCOTT SMITH, 1926. ISIS

(Italy, Geography). Catalogo Ragionato delle pubblicazioni cartografiche estere conservate nella Biblioteca e Cartoteca dell' Istituto Geografico Militare. *L'Universo*, 7, 1926, 60-62, 141-147, 228-236, 310-327, 399-406, 490-498, 596-606, 673-681, 763-775, 868-872, 929-931, 1025-1028; 8, 1927, 87-91, 213-215, 309-313. ISIS

Cartobibliographic notes on maps of other parts of the world than Italy arranged by countries. Under each country the maps are classified in four groups : large scale maps; small scale maps; maps showing special features; and old maps. J. K. W.

Jondet, Gaston. Atlas historique de la ville et des ports d'Alexandrie. *Mémoires présentés à la Société Sultanieh de Géographie* et publiés sous les auspices de Sa Hautesse AHMED FOUAD Sultan d'Égypte, II, Cairo, 1921. ISIS

Fifty-four photographic reproductions of maps, charts, and birdseye views, dating from the 15th century to 1920; accompanied by explanatory text. J. K. W.

Keltie, Sir John Scott, and Gilmour, Samuel Carter. Adventures of exploration. Book 5 : Australia and New Zealand. IV + 204 p. London, GEORGE PHILIP and Son, 1926. ISIS

Lebel, A. Roland. L'Afrique occidentale dans la littérature française (depuis 1870). IX + 277 p. Paris, EMILE LAROSE, 1925. ISIS

This book is much more than a bibliography; it is a study in literary history.

The author's purpose is to show the historical forces that have led to the production of books of travel, scientific studies, and imaginative works relating to the French colonial domains in West Africa, and that have molded the character of this literary output. He dwells on the importance of fiction as reflecting many aspects of French colonial enterprise overlooked in more formal publications. J. K. W.

Phillips, Philip Lee (1857-1924). A descriptive list of maps and views of Philadelphia in the Library of Congress, 1683-1865. 91 p., 2 illus. *Geographical Society of Philadelphia, Special Publication*, no. 2, Philadelphia, 1926. ISIS

490 items are listed, including 87 maps of the city of Philadelphia, and also lesser plans. Sizes but not scales (except when indicated in titles) of maps are given; also brief comments on some items. J. K. W.

Steinitzer, Alfred. Der Alpinismus in Bildern. Zweite ergänzte Auflage. 492 p., 637 illus. 16 colored plates. Münich, R. PIPER, 1924. ISIS

A magnificent collection of reproductions of prints, paintings, drawings, models, photographs, etc., depicting mountains and the development of mountaineering. As a recreation mountaineering plays an important part in the social life of many of the peoples of Central Europe. This interesting volume illustrates graphically the rise of « alpinism » as a social phenomenon as well as variations and improvements in the artist's technique of representing mountain scenery. J. K. W.

Wagner, Henry R. Some imaginary California geography. Reprint from the *Proceedings of the American Antiquarian Society*, for April 1926, 49 p., 8 plates. ISIS

This deals with Quivira, a mythical city and region thought in the sixteenth century to lie on the coast northwest of Mexico; with the Strait of Anian supposed to connect the Pacific with the Arctic Ocean; and with the persistent belief, which lasted as late as the early eighteenth century, that California was an island. J. K. W.

Wagner, Hermann. *Geographisches Jahrbuch*. 41. Band. 1926. 450 p. Gotha, JUSTUS PERTHES, 1926. ISIS

This volume contains a review by KONRAD KRETSCHMER of the studies in the history of medieval and modern geography that appeared in the period 1907-1925. The last review of this sort was that of W. RUGE (not OBERHUMMER as stated in *Isis*, 9, 201) in the *Geographisches Jahrbuch* for 1907. Students of the history of science as well as geographers will welcome this valuable summary. Other contributions to this volume consist of reviews of progress in the following branches of geographical science : geographical meteorology (1917-21); regional geography of the British Isles (1912-26); of Germany (1912-26) of Italy (1913-25); of Russian Asia and Central Asia (1914-25); and of Hispanic America (1913-25). The fact that each of these topics is treated by a different author doubtless is a partial explanation of the differences

in the number of references given in each case. On the other hand, it is unquestionably true that the number of publications mentioned reflects to some degree the actual amount of productive geographical research carried out in each of the countries during the periods covered. There are only 246 footnotes in which references are given to publications on the British Isles, whereas for precisely the same period there are at least 1160 references for Germany, and, for a shorter period, no less than 1055 for Italy. J. K. W.

32. — GEOLOGY, MINERALOGY, PALAEONTOLOGY, MINING.

(*For palaeobotany, palaeozoology and palaeoanthropology, see respectively*, 28. *botany*, 29. *zoology, and* 39. *prehistory*).

Daly, Reginald Aldworth. Our mobile earth. XXII + 342 p., illust. New York, SCRIBNER's Sons, 1926. ISIS

Excellent book. Reviewed by E. B. BAILEY, *Nature*, 119, 421-422, 1927; and by CHARLES SCHUCHERT, *Science*, 64, 624, 1926.

Giessberger, Hans. Das Schrifttum zur Erdbebenkunde Bayerns. 16 p. Nürnberg, CARL KOCH, 1926. ISIS

Groth, Paul. Entwicklungsgeschichte der mineralogischen Wissenschaften. VI + 262 p. 5 Textfig. Berlin, SPRINGER, 1926. ISIS

33. — METEOROLOGY, CLIMATOLOGY, AND TERRESTRIAL PHYSICS.

Bencker, Henri Lucien Georges. Les machines à prédire les marées. (Publication spéciale no. 13). 110 p., 39 fig. et plusieurs planches. Monaco, Bureau hydrographique international, 1926. ISIS

Describing about fifteen types of tide predicting machines from Sir WILLIAM THOMSON's first one, 1872, to the Liverpool machine of 1925.

Brooks, Charles Ernest Pelham. Climate through the ages. A study of the climatic factors and their variations. London, BENN, 1926. ISIS

Dopp, H. L'électricité atmosphérique. *Revue des questions scientifiques*, 4e S., 10, 5-47, 1926. ISIS

Aperçu général des recherches relatives à l'électricité atmosphérique (par temps calme et serein) depuis vingt-cinq ans, et des hypothèses d'interprétation les plus plausibles. L. G.

Haldy, Bruno. Die deutschen Bauernregeln, gesammelt und herausgegeben. Mit Monatsbildern von JOSUA LEANDER GAMPP. 126 S., illus. Jena, DIEDERICHS, 1923. ISIS

Hellmann, Gustav. Die Entwicklung der meteorologischen Beobachtungen in Deutschland von den ersten Anfängen bis zur Einrichtung staatlicher Beobachtungsnetze. *Abh. der Preuss. Akademie der Wiss., phys.-math. Kl.*, 25 S., 1926. ISIS

Humphreys, W. J. Rain-making and other weather vagaries. 150 p. Baltimore, WILLIAMS and WILKINS, 1926. ISIS

Reviewed by ALEXANDER MCADIE, *Science*, 64, 625, 1926.

Mascart, Jean. Les causes astronomiques possibles des variations de climat. *Revue générale des Sciences*, 37, 694-700, 1926. ISIS

McAdie, Alexander George. Man and weather. VI + 99 p., 18 pl. Cambridge, Harvard University Press, 1926. ISIS

Shaw, Sir **(William) Napier,** with the assistance of ELAINE AUSTIN. Manual of meteorology. Vol. I : Meteorology in history. XX + 339 p., 18 pl., Cambridge, University Press, 1926. ISIS

VI. ANTHROPOLOGICAL AND HISTORICAL SCIENCES.

(Knowledge of man, past and present).

34. — ANATOMY.

Hunter, Richard Henry. A short history of anatomy. 51 p. London, JOHN BALE, Sons and DANIELSSON, 1925. ISIS

Laignel-Lavastine, M. Le sympathique et l'âme végétative. *Bul. Soc. fr. d'Hist. Méd.*, 20, 381-388, 1926. ISIS

Müller, Reinhold F. G. Über Skelett-Darstellungen in Asia major. F. W. K. MÜLLER-Festschrift der Asia Major, S. 531-563, 24 Abb., 1925-26. ISIS

35. — PHYSICAL ANTHROPOLOGY.

(*Anthropometry and races of man*).

Deniker, J. Les races et les peuples de la terre. Deuxième édition revue et considérablement augmentée. 750 p., 340 fig., 2 cartes. Paris, MASSON, 1926. ISIS

Reviewed by G. ELLIOTT SMITH, *Nature*, 118, 545-547, 1926, also by A. CLÉRY, *Rev. gén. des Sciences*, 37, 515, 1926.

Ploss, Hermann Heinrich (1819-1885) und **Bartels, Max** und **Paul.**

Das Weib in der Natur- und Völkerkunde, Anthropologische Studien, neu bearbeitet und herausgegeben von FERD. v. REITZENSTEIN. Mit ausführlichem Sach- und Namenregister von H. SCHWEINFURTH. Elfte, stark vermehrte Auflage mit über 1000 Abbildungen im Text und ganzseitigen Tafeln, sowie 8 farbigen Spezialtafeln. Drei Bände. XI + 790 S., 469 Abb., 6 Taf.; VIII + 866 S., 302 Abb., 8 Bunttafeln; VII + 561 S., 222 Abb. Berlin, NEUFELD u. GENIUS, 1927. ISIS

Schütte, Gudmund. Vor Folkegruppe Gottjod : de gotiske, tyske, nederlandske, angelsaxiske, frisiske og nordiske Stammer i etnologisk Fremstilling. (Our Ethnic Group, the Gothonic Nations). Subventioned by the Carlsberg Fund. First volume, 299 p., 10 fig. Copenhagen, ASCHEHOUG, 1926. (Price Kr. 12,50). ISIS

This ethnological manuel is based upon studies which the author has pursued for some 30 years. It deals with that ethnic group which is generally called in England the « Teutonic », and on the Continent, the « Germanic ». The author avoids both terms; — cfr. the objections against these very ambiguous denominations set forth by the Dutch scholar CHANTEPIE DE LA SAUSSAYE, The Religion of the Teutons, p. 67, and by JEAN BRUNHES, *Le Correspondant*, Sept. 10th, 1917. The old Anglo-Saxon and Norse synonym « Gothic » is preferred, but in order to avoid ambiguity, the author adopts the form « Gothonic » derived from « Gothons » = Lat. « Gothones ». For further particulars on this question see his paper « Gothonic Names » in the *Publications of the Society for the Advancement of Scandinavian Study*, 1912, which is the nucleus of the corresponding chapter in the present work.

The first volume contains a chapter on the Indo-Europeans, and then the chapters dealing with the Gothons in general. The scientific value of this work can be appreciated only by specialists, but it has one obvious merit, its systematic arrangement. All similar works existing are chaotic, that is to say : the selection of particulars represented and also their sequence change from nation to nation. In this work, for the first time, a strict methodical selection of particulars and a fixed sequence are introduced. The chapter on the Indo-Europeans deals with the following topics : Names, Sub-divisions, Ethnic Position, Sphere of geographical relations, Ancient Home, Language, Civilization, History; and this sequence is repeated in the following chapters and will also be observed in the second volume, dealing with the individual Gothonic tribes. It will thus be very easy to consult this work and the more so in that a copious index has been added. Among particular features I may still mention : the detailed examination of the development of different groups of names and vocables; the map representing the oldest tribal names of the Gothons, and the diagrams representing the various expansion of different loan-words. G. S.

36. — PHYSIOLOGY (*human and comparative*).

Berg, Ragnar. Die Vitamine, kritische Uebersicht der Lehre von den Ergänzungstoffen. Zweite, umgearbeitete Auflage. 715 p. Leipzig, S. HIRZEL, 1927. ISIS

Reviewed by A. J. CARLSON, *Science*, 65, 304, 1927. An English translation of a previous edition by EDEN and CEDAR PAUL was published by A. K. KNOPF, New York, 1923 (415 p.).

Bilancioni, Guglielmo. I nervi della voce e del cuore alla luce della irritabilità halleriana. *Arch. di storia d. scienza*, 7, 49-66, 1926. ISIS

Cabanès. Les curiosités de la médecine; les cinq sens. 308 p. Paris, 1925. ISIS

Gley, Eugène. Les grands problèmes de l'endocrinologie. 178 p. Paris, BAILLIERE et fils, 1926. ISIS

Reviewed by J. E. ABELOUS, *Revue gén. des Sciences*, 37, 713, 1926.

Herrick, C. J. Brains of Rats and Men. XIII + 382 p., 53 fig., Chicago, Univ. of Chicago Press, 1926. ISIS

This is a splendid attempt to correlate in one volume the vast array of facts concerning the nervous system — from neuro-histology to higher philosophy. The first eight chapters deal very largely with the comparative anatomy and histology of the vertebrate nervous system, without losing sight of function. The next three chapters have to do with the learning process in the rat, where it has been extensively studied. Chapters XII to XV are a comparative study of nervous function in the vertebrates, while chapters XV to XIX, inclusive, are a psycho-philosophical review of nervous processes in man.

The subject is so vast that one wonders at the completeness of the various sections. The style is, however, somewhat obscure in spots, and it is to be regretted that Professor HERRICK has laid so much stress on American neurology, to the exclusion of equally meritorious European studies. R. M. MAY

Koch, Richard. Geschichtliche Einleitung. (Klinisches Lehrbuch der Inkretologie und Inkretotherapie, hrsg. von GUSTAV BAYER und R. VON DEN VELDEN. XIII + 423 S., 37 Abb.) S. 1-12. Leipzig, GEORG THIEME, 1927. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Med.*, 26, 67, 1927.

Leathes, J. B. Function and design. Address by the president of Section I — physiology — of the British Association for the Advancement of Science, Oxford, August, 1926. *Science* 64, 387-394, 1926; also *Nature*, 118, 519-522, 1926. ISIS

Richards, Oscar W. Graphic scientific history. As illustrated by the history of physiology. *Annals of Medical History*, 9, 74-75, 1927. ISIS

Sewall, Henry. Visualizing medical history. The physiology of respiration. *Annals of Medical History*, 9, 76-90, 1927. ISIS

37. — PSYCHOLOGY (*human and comparative*).

Bertrand-Barraud, Daniel. Des bases critiques d'un empirisme psychologique radical. 132 p. Paris, J. VRIN, 1926. ISIS

Six conférences faites à l'université de Bologne en février-mars 1925, et où l'auteur reprend la critique de l'intellectualisme qui fait la base de son ouvrage sur Les valeurs affectives et l'exercise discursif de la pensée (J. VRIN, 1924). L. G.

Hempelmann, Friedrich. Tierpsychologie : vom Standpunkte der Biologen. VIII + 676 p., plates and other illus. Leipzig, Akademische Verlagsgesellschaft, 1926. ISIS

Reviewed by HELENE E. BARGMANN, *Nature*, 118, 867-869, 1926.

McDougall, William. The group mind : a sketch of the principles of collective psychology, with some attempt to apply them to the interpretation of national life and character. (Cambridge Psychological Library). Second edition. XXII + 304 p. Cambridge, University Press, 1927. ISIS

Terman, Lewis M. (*editor*). Genetic studies of genius. Vol. I. Mental and physical traits of a thousand gifted children, by LEWIS M. TERMAN. (Second edition.) XIV + 648 p. Vol. II. The early mental traits of three hundred geniuses, by CATHARINE MORRIS COX. XXIV + 842 p. California, Stanford University Press, 1926. ISIS

38. — ARCHAEOLOGY.

(*Generalities, methods*).

Desvergnes, Louis. Analyse de poteries ligures provenant de l'ancien oppidum gaulois de « Vindalium » (Vaucluse). *Ann. de chimie analyt.*, 8, 40-41, 1926. ISIS

La composition de ces poteries se rapproche sensiblement de celle des poteries modernes. L. L.

Dieudonné, Adolphe Edmond. Manuel des poids monétaires. VII + 184 p., 16 pl. Paris, FLORANGE, 1925. ISIS

39. — PREHISTORY.

Burkit, Miles Crawford. Our early ancestors : an introductory study of mesolithic, neolithic and copper age cultures in Europe and adjacent regions. XII + 243 p. Cambridge, University Press, 1926. ISIS

Childe, Vere Gordon. The Aryans : a study of Indo-European origins. London, KEGAN PAUL, 1926. ISIS

Garrod, Dorothy Annie Elizabeth. The upper palaeolithic age in Britain. 211 p., 3 pl. Oxford, Clarendon Press, 1926. ISIS

Reviewed by M. C. BURKITT, *Nature*, 118, 833-834, 1926.

Moodie, Roy L. Studies in paleopathology, XVIII. Tumors of the head among pre-Columbian Peruvians. *Annals of Medical History*, 8, 394-412, 1926. ISIS

Rivet, P. Le rôle des Océaniens dans l'histoire du peuplement du monde et de la civilisation. *Annales de Géographie*, 35, p. 385-390, 1926. ISIS

RIVET suggests the possibility of a widespread « cultural contamination » radiating from the Polynesian area in very early times as far west as Africa, Southern Asia, and eastward to America. He believes that the Polynesians may have reached the west coast of South America by passing along the shores of the Antarctic continent at a time when the climate was not as hostile as now, perhaps about 6000 B. C. J. K. W.

Tschumi, Otto. Urgeschichte der Schweiz. 195 p. Frauenfeld, HUBER, 1926. ISIS

40. — ETHNOLOGY.

(*Primitive and popular science*).

Best, Elsdon. The Maori canoe. (*New Zealand, Dominion Museum, Bulletin* no. 7). Published under the direction of the board of Maori Ethnological Research, for the Dominion Museum. Wellington, N. Z., W. A. G. SKINNER, 1925. ISIS

Reviewed by SIDNEY H. RAY in *Nature*, 119, 297-298, 1927.

Crawley, Alfred Ernest. The mystic rose : a study of primitive marriage and of primitive thought in its bearing on marriage. A new edition, revised and greatly enlarged by THEODORE BESTERMAN. 2 vols., XX + 375 p., VII + 340 p. London, METHUEN, 1927. ISIS

First edition, London, MACMILLAN, 1902.

Gennep, Arnold van. GEORGE SAND folkloriste. *Mercure de France*, 1.06.1926, 371-384. ISIS

GEORGE SAND « n'a pris dans le Folklore que les sections plus ou moins étudiées par ses devanciers ... Elle n'a vu dans les mœurs qu'un canevas où broder des généralisations humaines, et aussi humanitaires ». Son œuvre folklorique ne vaut point l'admiration que lui attribuent ses biographes;

elle est même assez pauvre. L'article se termine par un tableau où sont classés, dans leurs cadres scientifiques, les documents folkloriques disséminés dans l'œuvre de G. SAND. L. G.

Hambly, Wilfrid D. Origins of education among primitive peoples; a comparative study in racial development. With a preface by CHARLES HOSE. XX + 432 p., 79 plates. London, MACMILLAN, 1926. ISIS

Karsten, Rafael. The civilizations of the South American Indians, with special reference to magic and religion. (The History of Civilization Series). With a preface by EDWARD WESTERMARCK. XXXII + 540 p. London, KEGAN PAUL, 1926. ISIS

Kuczynski, Max Hans. Steppe und Mensch, kirgisische Reiseeindrücke und Betrachtungeo über Leben, Kultur und Krankheit in ihren Zusammenhängen. 188 S. Leipzig, HIRZEL, 1925. ISIS

Reviewed by K. SUDHOFF, *Mitt. zur Geschichte der Med.*, 26, 65, 1927.

Lehmann-Nitsche, Robert. Astronomia popular gallega. *Humanidades*, 8, 371-394, Buenos Aires, 1924. ISIS

Lehmann-Nitsche, Robert. La constelación de la Osa Mayor y su concepto como huracán o dios de la tormenta en la esfera del Mar Caribe. *Revista del Museo de La Plata*, 28, 103-145, 1924. ISIS

Lehmann-Nitsche, Robert. Mitologia sudamericana. V. La astronomia de los Matacos. VI. La astronomia de los Tobas (1. parte). VII. La astronomia de los Mocovi. VIII. La astronomia de los Chiriguanos. X. La astronomia de los Tobas (2. parte). XI. La astronomia de los Vilelas. *Revista del Museo de La Plata*, 27, 253-266, 267-285; 28, 66-79, 80-102, 181-209, 210-233, 1923-1925. ISIS

Lehmann-Nitsche, Robert. Das Sternbild des Orkans. *Ibérica, Zeitschr. f. span. und portug. Auslandskunde*, 3, 41-44, 1925. ISIS

Locke, L. Leland. A Peruvian quipu. *Contributions from the Museum of the American Indian, Heye Foundation*; vol. 7., 11 p., illustrated, New York, 1927. ISIS

A supplement to the author's elaborate study of the quipus (1923), reviewed in *Isis*, 6, 219. G. S.

Mackenzie, Donald A. The migration of symbols : and their relations to beliefs and customs. (*The History of Civilization Series*). XVI + 220 p., 16 plates ,53 text illus. London, KEGAN PAUL, 1926. ISIS

Merriam, C. Hart. The classification and distribution of the Pit

River Indian tribes of California. 50 p., 1 map, 27 plates. Smithsonian Institution, Washington, D. C., 1926. ISIS

Rivers, William Halse Rivers. (1864-1922). Psychology and ethnology. (*International Library of Psychology, Philosophy and Scientific Method*). XXVIII + 324 p. London, KEGAN PAUL, 1926. ISIS

Whitebread, Charles. The Indian medical exhibit of the division of medicine in the United States National Museum. *Proceedings of the U. S. National Museum*, vol. 67, part 10, 2 pl., 1925. ISIS

Williams, Herbert William. A bibliography of printed Maori to 1900. (*Dominion Museum Monograph*, no. 7). XVI + 198 p. Wellington, N. Z., W. A. G. SKINNER, 1924. ISIS

Wright, Jonathan. The medicine of primitive man. *Medical Life*, 34, 41-46, 87-96, 1927. ISIS

41. — SUPERSTITION AND OCCULTISM.

Barrett, Sir **William** and **Besterman, Theodore.** The divining-rod : an experimental and psychological investigation. XXIII + 336 p., 12 pl. London, METHUEN, 1926. ISIS

Reviewed by HUGH ROBERT MILL, *Nature*, 119, 309-312, 1927.

Byloff, Fritz. Nestelknüpfen und- lösen. *Archiv für Geschichte der Medizin*, 19, 203-208, 1927. ISIS

Dealing with impotence caused by sorcery (nouer l'aiguillette). The author tells a story which occurred in Styria in 1672, the wizard being one JAKOB KRISCHAN. G. S.

Cornillier, Pierre Emile. La prédiction de l'avenir. Nouvelle théorie expérimentale. XII + 112 p. Paris, ALCAN, 1926. ISIS

L'auteur, partant de ses expériences personnelles, imagine que les prédictions « ne font que révéler des plans conçus par les intelligences astrales, dans le but immuablement poursuivi de déterminer l'évolution spirituelle des sociétés humaines. » C'est là la « clé, forgée par l'expérimentation », qui permet de pénétrer dans le « grand mystère de la connaissance de l'avenir ». Suivent des documents justificatifs ! L. G.

Granville, W. A. The fourth dimension and the Bible. 119 p. Boston, Mass., BADGER, 1922. ISIS

Reviewed by DAVID EUGENE SMITH, *American Mathematical Monthly* 34, 152. 1927.

Summers, Montague. The history of witchcraft and demonology.

(*The History of Civilisation Series*). XV + 353 p., 8 pl. London, KEGAN PAUL, 1926. ISIS

Suringar, J. Valckenier. « Het verzien » (Versehen; maternal impression, influence de l'imagination maternelle). *Bijd. tot de gesch. der geneeskunde*, 7, 176-187, 1927. ISIS

Vinchon, Jean et Garçon, Maurice. La genèse des idées modernes sur les démoniaques. *Aesculape*, août 1926. ISIS

Parmi les premiers observateurs qui élèvent des doutes sur la nature des états démoniaques, les auteurs font une place à part à CORNEILLE AGRIPPA (1486-1544), JEAN WIER (1515-1588), JEAN SCHENCK (2e moitié du XVIe) et FRÉDÉRIC DE SPRÉE (premières années du XVIIe). L. G.

42. — ECONOMICS.

(*Economic doctrines and history, commerce. Transportation and communications.*)

Miller, Constantin. Studien zur Geschichte der Geldlehre. I. Teil : Die Entwicklung im Altertum und Mittelalter bis auf ORESMUS. (*Münchener Volkswirtschaftl. Studien*, 146). 137 p. Stuttgart, Cotta'sche Buchhdlg., 1925. ISIS

Schulte, Aloys. Geschichte der grossen Ravensburger Handelsgesellschaft (1380-1530). Three volumes, illustrated. Berlin, Deutsche Verlags-Anstalt, 1923. ISIS

43. — SOCIOLOGY, JURISPRUDENCE AND POSITIVE POLITY.

Beale, Joseph Henry. A bibliography of early English law books, compiled for the Ames Foundation. VIII + 304 p., illus. Cambridge, Mass., Harvard University Press, 1926. ISIS

Declareuil, Joseph. Histoire générale du droit français, des origines à 1789. VIII + 1076 p. Paris, Société du Recueil Sirey, 1925. ISIS

Helbing, Franz. Die Tortur ; Geschichte der Folter im Kriminalverfahren aller Zeiten und Völker. Völlig neubearb. und ergänzt von MAX BAUER. Mit Schlusswort von MAX ALSBERG. 430 S. mit Abb. nach alten Meistern. Berlin, P. LANGENSCHEIDT, 1926. ISIS

Reviewed by HANS FEHR, *Deutsche Literaturzeitung*, 621-623, 1927.

Hobson, John Atkinson. Free-thought in the social sciences. New York, MACMILLAN, 1926. ISIS

Holdsworth, William Searle. Sources and literature of English law. With a foreword by the Rt. Hon. Lord Justice ATKIN. XI + 247 p. Oxford, Clarendon Press, 1925. ISIS

Lasbax, Emile. La cité humaine. Esquisse d'une sociologie dialectique. T. I. : Histoire des systèmes sociologiques. XII + 316 p. T. II : Cinématique, statique et dynamique sociale. 370 p. J. VRIN, Paris, 1927. ISIS

Le premier volume, surtout, de cette œuvre, nous intéresse. L'histoire des systèmes sociologiques y est présentée en deux chapitres intitulés : la Cité divine, et la Cité naturelle. Le premier de ces chapitres expose la sociologie sémitique, hindoue, iranienne, la Cité de Platon, celle d'Aristote, celle des stoïciens (POLYBE et CICÉRON), puis les théories de la période chrétienne jusqu'à la Renaissance (p. 1-161). Avec la Renaissance, à la notion de droit divin va succéder celle des droits de la nature, le stade des physiocraties va suivre le stade des théocraties, la cité naturelle va se substituer à la cité divine. Exposé des systèmes de MACHIAVEL, de HOBBES, MONTESQUIEU, ROUSSEAU (phase morale de la cité naturelle), d'ADAM SMITH, CONDORCET, HEGEL (phase économique), d'AUGUSTE COMTE, SAINT-SIMON, KARL MARX, DURKHEIM (phase politique). Ce cycle est à son tour fermé, et la crise politique actuelle étant analogue à celle de la Renaissance, comme alors doit s'ouvrir un nouveau cycle, celui de la cité humaine, que l'auteur construit dans son second volume, sur les bases d'une communauté réaliste des nations, annonçant une philosophie des valeurs. L. G.

Marcuse, Max. Handwörterbuch der Sexualwissenschaft; Enzyklopädie der natur- und kulturwissenschaftlichen Sexualkunde des Menschen. IV + 481 p. Bonn, MARCUS und WEBER, 1923. ISIS

Villey, Pierre. L'aveugle dans le monde des voyants. Essai de sociologie. 336 p. *Biblioth. de philosophie scientifique*, E. FLAMMARION, Paris, 1927. ISIS

Nous devons déjà à l'auteur, professeur de langue et de littérature françaises à l'université de Caen, et qui connait admirablement le monde des aveugles — il est aveugle lui même depuis l'âge de quatre ans, et dirige le *Valentin Haüy, revue universelle des questions relatives aux aveugles*, fondée en 1883 —, deux ouvrages sur la cécité. Dans Le monde des Aveugles (FLAMMARION, 1914), il montrait comment l'aveugle est capable d'un plein développement intellectuel et moral; dans la Pédagogie des aveugles (ALCAN, 1922), il indiquait par quelles méthodes on peut assurer ce développement. Voici maintenant que sont étudiées, après une vaste enquête poursuivie jusque dans les milieux les plus lointains, au moyen par exemple de questionnaires envoyés aux missionnaires catholiques et protestants, aux diplomates, poussée aussi dans l'histoire de la civilisation, les réactions de la société aux diverses étapes de son développement, pour éliminer ou assimiler l'aveugle, quelles croyances, quelles légendes, quelles œuvres d'imagination il a fait naître, et dans quelle mesure, par quels moyens l'aveugle est parvenu à détruire les préjugés attachés à la cécité, comment il a pu, surtout sous l'impulsion de VALENTIN HAÜY qui le premier (été 1784) eut la chance de réussir l'instruction systéma-

tique des aveugles, s'adapter au milieu social d'abord hostile, et s'y faire une place. Chemin faisant, nombre de questions sont examinées: risque de cécité suivant les âges, les sexes, les milieux; action de la civilisation, qui recule l'âge de la cécité, diminue le nombre des aveugles et les adapte par le travail; solutions apportées au problème de l'adaptation sociale de l'aveugle au Japon (aveugles masseurs dès le X^e siècle), dans le monde de l'Islam (étude des sciences religieuses, des traditions prophétiques). L. G.

Webb, Sidney and **Beatrice**. English local government : English poor law history. Part I. The old poor law. x + 447 p. London, LONGMANS, 1927. ISIS

Westermarck, Edvard. A short history of marriage. XIII + 327 p. London, MACMILLAN, 1926. ISIS

Reviewed by ARTHUR W. CALHOUN, *American Historical Review*, 32, 558-559, 1927. For the author's more elaborate work on the same subject see *Isis*, 4, 643.

44. — HISTORY OF CIVILIZATION.

(General history, historical methods, biography and chronology.)

Gillier, Commandant. La pénétration en Mauritanie. XII + 360 p. Paris, PAUL GEUTHNER, 1926. ISIS

Le Commandant GILLIER a voulu comme il le dit lui-même « retracer à grands traits les étapes successives de la pénétration en Mauritanie, rappeler ce qui a été fait et chercher à esquisser ce qui reste à faire. » Ces quelques lignes indiquent la tendance de l'ouvrage. En trois pages l'auteur termine l'histoire de la Mauritanie dans l'Antiquité (description rapide du voyage d'HANNON) pour sauter vingt siècles, arriver aussitôt aux explorations des VIVALDI et consacrer une trentaine de pages à ce qu'il appelle « les origines » — c'est-à-dire l'histoire du pays jusqu'à l'installation définitive des français au Sénégal (1817). Tout le reste du volume, ou à peu près, concerne l'histoire des troupes coloniales françaises. On y parle d'offensives, de renforcements de troupes, très peu du pays même : tout cela est très intéressant, captivant même, mais ne doit pas être examiné ici.

Il est regrettable que l'auteur n'ait pas étudié les « origines » avec plus de soin. Il ne semble pas même se douter qu'il existe des sources de première matin et sauf l'histoire de l'Afrique de M. DE LA RONCIÈRE et quelques articles de revue, il n'a consulté aucun ouvrage scientifique. Les références sont inutilisables : l'une d'elles nous renvoie à M. GSELL, sans plus (« d'après M. GSELL, » p. 9). G. D.

Huntington, Ellsworth. The pulse of progress : including a sketch of Jewish history. With a chapter on climatic changes by G. L. SIMPSON. VIII + 341 p. London, SCRIBNER, 1926. ISIS

Johnson, Allen. The historian and historical evidence. 179 p. New York, SCRIBNER's, 1926. ISIS

Jusserand, Jean Jules; Abbott, William Cortez; Colby, Charles W.; Bassett, John Spencer. The writing of history. XII + 143 p. New York, SCRIBNER's, 1926. ISIS

Reviewed by ALLEN JOHNSON, *American Historical Review*, 32, 293-295, 1927.

Masur, Gerhard. RANKES Begriff der Weltgeschichte. (Beiheft 6 der *Historischen Zeitschrift*). 133 p. Munich, R. OLDENBOURG, 1926. ISIS

Reviewed in *American Historical Review*, 32, 151, 1926.

(Pirenne, Henri). Mélanges d'histoire offerts à HENRI PIRENNE par ses anciens élèves et ses amis à l'occasion de sa quarantième année d'enseignement à l'Université de Gand, 1886-1926. 2 vol., 678 p. Bruxelles, VROMANT, 1926. ISIS

Containing a portrait and elaborate bibliography. The papers of special interest to our readers are included in the present bibliography. G. S.

Sée, Henri. Quelques remarques sur la philosophie de l'histoire de COURNOT. *Revue de Synthèse historique*, 42, 5-18, 1926. ISIS

Steinberg, Sigfrid (*editor*). Die Geschichtswissenschaft der Gegenwart in Selbstdarstellungen. Band II. IV + 222 p. Leipzig, FELIX MEINER, 1926. ISIS

Reviewed by WALTER L. DORN, *American Historical Review*, 32, 606-607, 1927. Vol. I appeared in 1925 (*Isis*, 8, 784).

(Switzerland, Biography). Dictionnaire historique et biographique de la Suisse. Publié avec la recommandation de la Société Générale Suisse d'Histoire et sous la direction de MARCEL GODET, Directeur de la Bibliothèque Nationale, HENRI TURLER, Directeur des Archives Fédérales, VICTOR ATTINGER, Editeur, avec de nombreux collaborateurs de tous les Cantons. Volumes I. et II. Neuchâtel, Administration du Dictionnaire Historique et Biographique de la Suisse, 1924. ISIS

Reviewed by ALBERT SCHINZ, *American Historical Review*, 32, 88-89, 1926

45. — HISTORY OF ART.

(*Art and science, Iconography. Arts and crafts.*)

Joyce, Thomas Athol. Maya and Mexican art. 199 p. London, *The Studio*, 1926. ISIS

Rosenthal, Oskar. Wunderheilungen und ärztliche Schutzpatrone in der bildenden Kunst. 42 S. 102 Tafeln. Leipzig, F. C. W. VOGEL, 1925. ISIS

Smith, David Eugene. The relation of music to mathematics. *Teachers College Record*, 28, 5 p., March 1927. ISIS

46. — HISTORY OF LANGUAGE, WRITING AND LITERATURE.

Brunot, Ferdinand. Histoire de la langue française des origines à 1900. t. 7. La propagation du français en France jusqu'à la fin de l'ancien régime. 360 p. Paris, COLIN, 1926. ISIS

Dauzat, Albert. Les noms de personnes, origine et évolution; prénoms — noms de famille — surnoms — pseudonymes. VII + 211 p. Paris, DELAGRAVE, 1925. ISIS

Reviewed by LOUIS COQUELIN in *Larousse Mensuel*, 6, 792-794, 1925.

Fitzmaurice-Kelly, James (1858-1923). Geschichte der spanischen Literatur. Übers. von ELISABETH VISCHER, hrsg. von ADALBERT HÄMEL. (Samml. roman. Elementar — und Handbücher hrsg. von WILH. MEYER-LÜBKE, II. Reihe : Literaturgeschichte, 3). XV + 653 p. Heidelberg, CARL WINTER, 1925. ISIS

Reviewed by E. WINKLER, *Deutsche Literaturzeitung*, 2380-2382, 1926.

Hesseling, Dirk Christiaan. Histoire de la littérature grecque moderne. Traduite du néerlandais par N. PERNOT. (*Collection de l'Institut néo-hellénique*, 1). Paris, Belles Lettres, 1924. ISIS

Meillet, Antoine. La méthode comparative en linguistique historique. *Inst. für Sammenlignende Kulturforskning*. Ser. A. II.) VIII + 117 p. Oslo, 1925. ISIS

Reviewed by A. NEHRING, *Deutsche Literaturzeitung*, 302-307, 1927.

Meillet, A. et Cohen, Marcel. Les langues du monde, par un groupe de linguistes sous leur direction. XVI + 812 p., 18 cartes linguistiques hors texte. (*Collection publiée par la Société de linguistique de Paris*, 16). Paris, CHAMPION, 1924. ISIS

Admirable ouvrage divisé comme suit : A. MEILLET. Introduction; J. VENDRYES. Langues indo-européennes; MARCEL COHEN. Langues chamito-sémitiques; A. SAUVAGEOT. Langues finno-ougriennes et langues samoyèdes; J. DENY. Langues turques, langues mongoles et langue tongouzes; SERGE ELISSÉÈV. Langue japonaise, Langue coréenne, Langue aïnou, Langues hyperboréennes; C. AUTRAN. Langues propres de l'Asie antérieure ancienne; GEORGES LACOMBE. Langue basque; N. TROUBETZKOY. Langues caucasiques septentrionales; A. MEILLET. Langues caucasiques méridionales; JULES BLOCH. Langues dravidiennes; J. PRZYLUSKI. Langues sino-tibétaines, Langues austro-asiatiques; GABRIEL FERRAND. Langues malayo-polynésiennes; A. MEILLET.

Langues de l'Australie; MAURICE DELAFOSSE. Langues du Soudan et de la Guinée; L. HOMBURGER. Langues bantou, Langues bochimanes et hottentotes; P. RIVET. Langues américaines. Index des noms de langues et d'écritures (176 colonnes!) Les cartes, qui constituent une nouveauté dans un ouvrage aussi général que celui-ci, sont fort intéressantes. G. S.

Mirskii, (Prince) Dmitry Svyatopolk. Contemporary Russian literature, 1881-1925. XV + 374 p. New York, KNOPF, 1926. ISIS

Meinhof, Carl. Afrikanische Bibelübersetzungen. (Basler Missionsstud., N. F., H. 1) 34 p. Basel, Missionsbuchh., 1926. ISIS

Reviewed by D. WESTERMANN, *Deutsche Literaturzeitung*, 2461-2463, 1926.

Pankhurst, Estelle Sylvia. Delphos : the future of international language. (To-day and to-morrow Series). 95 p. London, KEGAN PAUL, 1927. ISIS

Ray, Sidney Herbert. A comparative study of the Melanesian Island languages. XV + 599 p., maps. Cambridge, University Press, 1926. ISIS

47. — HISTORY OF MORALS.

(*Moral organization of society*).

Leighton, Joseph Alexander. The individual and the social order : an introduction to ethics and social philosophy. XIX + 578 p. New York, D. APPLETON, 1926. ISIS

48. — HISTORY OF PHILOSOPHY.

(*See also above* 18. *Philosophy of science*)

Boutroux, Emile. La nature de l'esprit. 274 p., *Bibl. d'histoire de la philosophie*, Paris, VRIN, 1926. ISIS

Recueil de conférences qui tire son titre du programme de conférences «Gifford » données à l'Université de Glasgow en 1903-05 (p. 9-48). Viennent ensuite des conférences dont voici les titres : hasard ou liberté; le bon sens; certitude et vérité; du rapport de la philosophie aux sciences (Congrès de Philosophie de Bologne, 1911); la psychologie du mysticisme; religion et raison; l'essence de la religion; la conscience individuelle et la loi; le rôle de la philosophie dans le passé et dans l'avenir. L. G.

Herrick, C. Judson. Fatalism or freedom. A biologist's answer. 96 p. New York, W. W. NORTON, 1926. ($ 1). ISIS

« In the preceding pages the attempt has been made to evaluate human freedom in terms of the common meaning of the word in so far as this can be done within the limits set by the methods of natural science. This naturalis-

tic treatment requires that the concept of uncaused action and all metaphysical categories, absolutes and sanctions be rigourously excluded. Such limited freedom will not be acceptable to those who demand the divine priviliege of creating something out of nothing or of choosing to which of the laws of nature they will conform their actions. The people who make claim to these powers have difficulty in making good in practice. But natural freedom as here defined meets every practical need ; and it embraces the noblest human capacities and satisfactions.» A more technical work of the same author, eminent neurologist of the University of Chicago, has been analysed in *Isis*, 10, 289. G. S.

Keyser, Cassius J. Mole philosophy and other essays. X + 234 p. New York. DUTTON, 1927. ISIS

A collection of stimulating essays by an American mathematician to whom we owe a great deal of gratitude because of his courageous and persistent denunciation of cant and muddle headed thinking (*Isis*, 9, 566). His essay on the significance of death is particularly interesting : « Death is not the tragedy of life; it is a limitation of life, essential to its beatitudes : the tragedy is that, if it were not for death, life would be void of worth. » I realize more deeply every day the necessity of limitations, which is another way of saying the value of discipline. The chapter entitled Man and men is a splendid justification of our studies. « I have no single formula for the solution of all your industrial problems, much less have I one for solving all the problems of our troubled modern world. But it is my conviction that the chief source of trouble is this : *We have been and are living in the midst of a great civilization like maggots in a cheese.* » The last part is inspired by Count ALFRED KORZYBSKI's work : The manhood of humanity, the science and art of human engineering (New York, DUTTON, 1921). G. S.

Lalande, André. Vocabulaire technique et critique de philosophie. 2 vols. 1065 p. Paris, FELIX ALCAN, 1926. ISIS

Morgan, C. Lloyd. Life, mind and spirit : being the second course of the Gifford lectures delivered in the University of St. Andrews in the year 1923 under the general title of « Emergent Evolution ». XIX + 316 p. London, WILLIAMS and NORGATE, 1926. ISIS

Reviewed by G. C. FIELD, *Nature*. 118, 582-583, 1926.

Perry, Ralph Barton. Philosophy of the recent past : an outline of European and American philosophy since 1860. VIII + 230 p. New York, CHARLES SCRIBNER, 1926. ISIS

Richet, Charles. L'intelligence et l'homme. Études de psychologie et de physiologie. X + 376 p., FELIX ALCAN, Paris, 1927. ISIS

Le vieil idéaliste qu'est CHARLES RICHET publie ici un certain nombre d'essais que relie par delà le livre son adoration de l'intelligence humaine et sa croyance au progrès : « il faut combattre pour la justice... on aura combattu pour l'avenir. Et cela vaut la peine d'avoir vécu ». Mais si l'on ne saisit pas ce

lien, la mosaïque dont est composé l'ouvrage actuel peut sembler étrange : considérations sur la civilisation, sur le langage et l'intelligence, sur les conditions de la certitude (à propos de métapsychique ' RICHET est l'inventeur du mot '), sur les origines et les modalités de la mémoire, sur la peur, sur les voies sensorielles de la connaissance et la méthode expérimentale (encore des faits de métapsychique), la lutte pour le carbone, les bases physiologiques de la morale, la maîtrise de soi, le courage, une nouvelle hypothèse de biologie générale (la loi de l'attraction universelle et la loi du travail maximum s'appliquent aux phénomènes biologiques), les causes finales en biologie. L. G.

Russell, Bertrand. Unser Wissen von der Aussenwelt. Übersetzt von WALTHER ROTHSTOCK. VIII + 331 S. Leipzig, MEINER, 1926. ISIS

Reviewed by M. KRONENBERG, *Die Naturwissenschaften*, 945-946, 1926. Original edition, Chicago 1914, reviewed in *Isis*, 3, 311-314.

Sapper, Karl. Das Element der Wirklichkeit und die Welt der Erfahrung. Grundlinien einer anthropozentrischen Naturphilosophie. XV + 250 p. München, BECK, 1924. ISIS

Reviewed by M. KRONENBERG, *Die Naturwissenschaften*, 735-738, 1926.

Saxl, Fritz (*editor*). Vorträge der Bibliothek Warburg. Vorträge 1923-24. 277 S., 61 Abb. Leipzig, TEUBNER, 1926. (12 Mk.) ISIS

Inhalt : ULRICH VON WILAMOWITZ-MÖLLENDORFF. Zeus; ERNST HOFFMANN, Platonismus und Mittelalter; HANS LIEBESCHÜTZ, Kosmologische Motive in der Bildungswelt der Frühscholastik; RICHARD REITZENSTEIN, Die nordischen, persischen und christlichen Vorstellungen vom Weltuntergang; HUGO GRESSMANN, Die Umwandlung der orientalischen Religionen unter dem Einfluss hellenischen Geistes; FRANZ J. DÖLGER, Gladiatorenblut und Märtyrerblut.Eine Szene der *Passio Perpetuae* in kultur-und religionsgeschichtlicher Beleuchtung ; ADOLPH GOLDSCHMIDT, Frühmittelalterliche illustrierte Enzyklopädien; CONRAD BORCHLING, Rechtssymbolik im germanischen und römischen Recht. Some of these titles are quoted again under the author's names in the section Middle Ages.

Siegel, Carl. Grundprobleme der Philosophie organisch entwickelt. XI + 218 p. Wien, WILH. BRAUMÜLLER, 1925. ISIS

Reviewed by F. NETOLITZKY, *Die Naturwissenschaften*, 739-740, 1926.

Smuts, (General) **Jan Christiaan.** Holism and evolution. IX + 361 p. London, MACMILLAN, 1926. ISIS

Reviewed by J. GRAHAM KERR, *Nature*, 119, 307-309, 1927.

Zybura, John S. Present-day thinkers and the new scholasticism : an international symposium. Edited and augmented. With an introduction by the Very Rev. JOHN CAVANAUGH. XVIII + 543 p. St. Louis and London, HERDER, 1926. ISIS

Reviewed by JAMES H. RYAN, *Speculum*, 1, 454-456, 1926.

49. — HISTORY OF RELIGION.

(*Science and religion*).

Chantepie de la Saussaye, Pierre Daniel (1848-1920). Lehrbuch der Religionsgeschichte. 4. völlständig neu bearb. Aufl. hrsg von ALFRED BERTHOLET und EDVARD LEHMANN. VIII + 756 p., VIII + 732 p. Tübingen, J. C. B. MOHR, 1925. ISIS

Reviewed by FRIEDRICH HEILER, *Deutsche Literaturzeitung*, 2317-2321, 1 26.

Clemen, Carl. Religionsgeschichte Europas. Erster Band. Bis zum Untergang der nichtchristlichen Religionen. VIII + 383 p. Heidelberg, CARL WINTER, 1926. ISIS

Reviewed by THEOPHILE J. MEEK, *American Historical Review*, 32, 635-636, 1927.

Goblet d'Alviella, count (1846-1925) Historian of religion. Obituary by F. W. THOMAS, *Journal of the Royal Asiatic Society*, 814-815, 1925. ISIS

Heiler, Friedrich. The spirit of worship. Translated by W. MONTGOMERY. London, HODDER and STOUGHTON, 1926. ISIS

Hurst, George Leopold. An outline of the history of Christian literature. IX + 547 p. New York, MACMILLAN, 1926. ISIS

Hutton, Edward. The Franciscans in England, 1224-1538. 236 p. London, CONSTABLE, 1926. ISIS

Reviewed in *American Historical Review*, 32, 576-578, 1927.

Lidzbarski, Mark. Ginzâ, der Schatz oder das grosse Buch der Mandäer. Übersetzt und erklärt. (*Quellen d. Religionsgeschichte* hrsg. I. Aufttr. d. Religionsgeschichtl.Kommission bei d. Ges. d.Wissensch. zu Göttingen, Bd. 13, Gruppe 4.) XVIII + 619 S. Göttingen, VANDENHOECK und RUPRECHT; 1925. ISIS

Reviewed by ENNO LITTMANN, *Deutsche Literaturzeitung*, 1929-1932, 1926.

Normand, Victor. La confession. 172 p. Paris, RIEDER, 1926. ISIS

Pinard de la Boullaye, H. L'étude comparée des religions; essai critique. 2 vol. Paris, BEAUCHESNE, 1922-24. ISIS

Scheftelowitz, Isidor. Die Entstehung der manichäischen Religion und der Erlösungsmysteriums. 86 p. Giessen, A. TOPELMANN, 1922. ISIS

Reviewed by H. H. SCHAEDER, *Der Islam*, 13, 320-333, 1923.

Streeter, Burnett Hillman. Reality : a new correlation of science and religion. XIII + 350 p. London, MACMILLAN, 1926. ISIS

Reviewed in *Nature*, 119, 273-274, 1927.

Whitehead, Alfred North. Religion in the making : Lowell lectures, 1926. 160 p. Cambridge, University Press, 1926. ISIS

Wieman, Henry Nelson. Religious experience and scientific method. V + 387 p. New York, MACMILLAN, 1926. ISIS

VII. MEDICINE.

50. — HISTORY, ORGANIZATION, AND PHILOSOPHY OF MEDICINE.

Almkvist, Johan. Zur Geschichte der Circumcision. *Janus*, 30, 86-104, 152-171, 1926. ISIS

Beck, Claude S. The operative story of the heart. *Annals of Medical History*, 8, 224-233, 1926. ISIS

Cabanès, Auguste. Les curiosités de la médecine. Vol. II. Les cinq sens. Vol. III. Les fonctions de la vie. Paris, E. LE FRANÇOIS, 1926. ISIS

Cumston, Charles Greene. An introduction to the history of medicine : from the time of the Pharaohs to the end of the XVIIIth century. With an essay on the relation of history and philosophy to medicine, by F. G. CROOKSHANK. (*The History of Civilization Series.*) XXXII + 390 p. 24 pl. London, KEGAN PAUL, 1926. ISIS

One of the large series of books on The History of Civilization, edited by C. K. OGDEN. Written mainly from the standpoint of theories of medical treatment. Interesting chiefly for specialist in speculative medical philosophy and hardly suited for general reader. Not much attention given to the important steps in the development of the scientific aspects of Medicine. Nicely illustrated. C. D. L.

Cushing, Harvey. Consecratio Medici. *The Journal of the American Medical Association*, 87, 539-542, 1926. ISIS

Delprat, C. C. De geschiedenis der Nederlandsche geneeskundige tijdschriften van 1680 tot 1857. *Bijd. tot de geschied. der geneeskunde*, 7, 1-114, 201-314, 1927. ISIS

Important memoir describing carefully all the Dutch medical journals. The earliest was the *Collectanea medico-physica oft Hollands Jaar-Register* edited by STEPHANUS BLANKAART from 1680 to 1688. Numerous facsimiles. G. S.

Diller, Theodore. Pioneer medicine in western Pennsylvania. *Annals of Medical History*, 8, 292-324, 1926. ISIS

Grüber, Goerg G. Abrisse aus der Geschichte der Mainzer medizinischen Fakultät, von JOHANN GRÖSER († 1862) mit Ergänzungen und Anmerkungen versehen von G. G. GRÜBER. *Janus*, 30, 8-26, 47-78, 1926. ISIS

Haberling, W. Die Bedeutung der Rheinländer für die Entwicklung der medizinischen Wissenschaft. 16 p. *Klinische Wochenschrift*, 5. Jahrg., Nr. 38. Berlin, SPRINGER, 1926. With many portraits. ISIS

Hirsch, Max. Alte und neue Heilkunde im Lichte der Lehre von der inneren Sekretion. (Handbuch der inneren Sekretion, hrsg. von MAX HIRSCH, Bd. I). S. 1-24, Berlin 1926. ISIS

Reviewed by DIEPGEN, *Mitt. zur Geschichte der Medizin*, 26, 66, 1927.

Honigmann, Georg. Geschichtliche Entwicklung der Medizin in ihren Hauptperioden dargestellt. 132 S. München, 1925. ISIS

Koch, Richard. Der Anteil der Geisteswissenschaften an den Grundlagen der Medizin. *Archiv für Geschichte der Med.*, 18, 273-301, 1926. ISIS

Krumbhaar, E. B. Some medical medals and tokens to be presented to the College of Physicians of Philadelphia. *Annals of Medical History*, 8, 360-369, 1926. ISIS

Lafond, Louis. La dynastie des HELVÉTIUS. 234 p., illus. Toulouse, E.-H. GUITARD, 1926. ISIS

Reviewed by A. GARRIGUES, *Revue gén. des Sciences*, 38, 88, 1927, and by L. GUINET, *Isis*, 9, 525-6, 1927.

(Nourry, Emile). Médecine ancienne, chirurgie-anatomie, sciences anciennes. 152 p. Paris, E. NOURRY, 1927. ISIS

Je signale ce catalogue illustré parce qu'il offre entre autre choses une collection de plus de deux cents ouvrages des XV^e^ au XVIII^e^ siècle relatifs à la syphilis, à vendre en bloc. G. S.

Opuscula selecta Neerlandicorum de arte medica. Fasciculus quintus, quem curatores miscellaneorum quae vocantur Nederlandsch Tijdschrift voor Geneeskunde collegerunt et ediderunt. XII + 381 p. Amstelodami, Sumptibus Societatis, 1926. ISIS

The fourth volume of this remarkable collection was reviewed in *Isis*, 7, 595. The fifth volume is hardly less interesting. It contains three important

memoirs by JACOB VAN DE BACK, ARNOLDUS BOOT and F. C. DONDERS, which are analysed in the present bibliography, see XVII (1) C, XVII (1) D. XIX (1) B. G.

Proskauer, Curt. Iconographia Odontologica. (Kulturgeschichte der Zahnheilkunde in Einzeldarstellungen). 250 S., 186 Abb. Berlin, HERMANN MEUSSER, 1926. ISIS

I. Teil : Vorwort. Kulturhistorische Einleitung. II. Teil : Bilderteil aus 186 Abbildungen bestehend. III. Teil : Erlauterungen zu den Abbildungen, Namenregister, Standortregister, Sachregister, Literaturverzeichnis.

Rolleston, Sir Humphry. Some worthies of the Cambridge Medical School. *Annals of Medical History*, 8, 331-348, 1926. ISIS

Brief sketches with portraits of the following : JOHN CAIUS, FRANCIS GLISSON, ROBERT GLYNN, Sir BUSICK HARWOOD, Sir ISAAC PENNINGTON, JOHN HAVILAND, Sir THOMAS WATSON, HENRY J. HAYLES BOND, Sir GEORGE MURRAY HUMPHRY, WILLIAM HARVEY, Sir MICHAEL FOSTER, ALEXANDER MACALISTER, Sir CLIFFORD ALLBUTT.

Sternberg, Maximilan. Die Bedeutung der scholastischen Philosophie für das heutige medizinische Denken. (*Abh. z. theoret. Biologie*, hrsg. von PROF. JULIUS SCHAXEL. Heft 24) 22 S. Berlin, BORNTRAEGER, 1926. ISIS

Sudhoff, Karl. Anthropogeographie, Weltgeschichte und die Entwicklung der Heilkunde. Vortrag gehalten in Königl. Ung. Ärztevereine in der Sitzung am 2. Mai 1925. Orvosi Hetilap, 1925. ISIS

Reviewed by FRANZ CLAUDIUS MAYER, in *Mitt. zur Geschichte der Medizin*, 303-304, 1926.

Tricot-Royer, J. J. G. Quelques tombes médicales oubliées et retirées de l'ombre. *Bull. Soc. fr. d'hist. de la méd.*, 21, 45-60, 1927. ISIS

A propos of JEAN DE CORNOUAILLES (d. 1300), GALERAN DE PANDREF (d. 1404) ; PIERRE CARDONNEL (d. 1438), PIERRE HARCENT (d. 1452), ROBERT CADOT (d. 1525), MICHEL DE COLONIA (d. 1529), JEAN RUEL (d. 1537), PIERRE LYON (d. 1586), JEAN DE FROIDEVAL (d. 1556), JACQUES GUILLEMEAU (d. 1613), PIERRE BESNARD (d. 1671), La nourrice TIPHAINE (d. 1458).

Vierordt, Hermann. Todesursachen im ärztlichen Stande. Ein Beitrag zur Ärzte-Biographie. 107 S. Stuttgart, FERD. ENKE, 1926. ISIS

(Wellcome Museum). The Wellcome Historical Medical Museum handbook. 118 p. London, Wellcome Foundation, Limited, 1926. ISIS

51. — EPIDEMIOLOGY, HISTORY OF SPECIAL DISEASES. PUBLIC HEALTH AND SOCIAL MEDICINE.

Andel, M. A. van. Contribution à l'iconographie de la lèpre. *Janus*, 30, 192-194, 1926. ISIS

Reproduction et commentaire d'un bas-relief ornant le fronton de la porte de la léproserie de Gouda, et d'un tableau de BARENT FABRICIUS (musée de l'état, à Amsterdam). L. G.

Andel, M. A. van. Der Skorbut als niederländische Volkskrankheit. *Archiv für Geschichte der Medizin*, 19, 82-91, 1927. ISIS

Baer, Max. Medizinisch-statistische Ergebnisse aus Zürcher Kirchenbüchern des 17. und 18. Jahrhunderts. (*Diss.*) *Schweiz. Ztschr. f. Gesundheitspflege*, Heft 6, 32 S., 1926. ISIS

Breukink, H. Overzicht van opvatting en behandeling van geesteszieken in oude tijden. *Bijd. tot de gesch. der geneeskunde*. 6, 319-326, 1926. ISIS

Cumston, Charles Greene. The history of herpes from the earliest times to the nineteenth century. With remarks on dermatological lesions in general. *Annals of Medical History*, 8, 284-291, 1926. ISIS

David, René. L'hygiène religieuse dans les livres sacrés. *Thèse* de Paris, 44 p. Paris, VIGNE, 1926. ISIS

Froehner, Reinhard. Die Ursachen der grossen Viehseuchen des Altertums und des Mittelalters nach der Auffassung der Zeit. *Prager Archiv für Tiermedizin und vergleichende Pathologie*, 6, 161-169, 1926. ISIS

Haberling, W. Der Herzpolyp. (Ausgewählte Kapitel aus der Geschichte der Krankheiten, 1.) *Medizinische Welt*, 1. Jahrg., Nr. 11, 7 p., April 1927. ISIS

Hermans, E. H. Enkele beschouwingen over de geschiedenis van de Framboesia tropica. *Bijdr. tot de geschied. der geneesk.*, 7, 188-195, 1927. ISIS

Ketting, Gerard Nicolaas Adriaan. Bijdrage tot de geschiedenis van de lepra in Nederland. 298 S. 's Gravenhage, MOUTON, 1922. ISIS

To replace note in *Isis*, 8, 820.

Knopf, S. Adolphus. The American anti-tuberculosis crusade, as

an inspiration to modern health activities. *Medical Life*, 33, 558-588, many illustrations, 1926. ISIS

Nohl, Johannes. The black death. A chronicle of the plague. Translated by C. H. CLARKE. London, ALLEN and UNWIN, 1926. ISIS

The original German text (1924) was reviewed in *Isis*, 9, 380.

Ravogli, Augustus. History of dermatology. *Medical Life*, 33, 492-538, 1926. ISIS

1. Dermatology in antiquity. 2. Middle Ages. 3. Renaissance and later. 4. Nineteenth century .5. St. Louis hospital. 6. MARIE GUILLAUME ALPHONSE DEVERGIE. 7. ANTOINE PIERRE ERNEST BAZIN. 8. ANDRÉ VICTOR CORNIL. 9. Other French dermatologists. 10. Dermatology in Lyon. 11. FERDINAND VON HEBRA. 12. MORITZ KAPOSI. 13. HEINRICH AUSPITZ. 14. HANS VON HEBRA, NEUMANN, RECKLINGHAUSEN. Many portraits.

Thorndike, Lynn. The blight of pestilence on early modern civilization. *American Historical Review*, 32, 455-474, 1927. ISIS

52.— HISTORY OF HOSPITALS AND OF MEDICAL TEACHING.

Busquet. Les origines de l'Académie de médecine. *Bul. Soc. fr. d'hist. de la Méd.*, 20, 391-396, 1926. ISIS

Creswell, Clarendon Hyde. The Royal College of Surgeons of Edinburg. Historical notes from 1505 to 1905. Privately printed for the College by OLIVER and BOYD, Edinburgh, 1926. ISIS

Reviewed by FRANCIS R. PACKARD, *Annals of Medical History*, 8, 448, 1926.

Paolo, Amaldi. Vicende di nomi e di studi manicomiali. *Riv. di storia d. sc. med. e natur.*, 17, 49-70, 1926. ISIS

Stübler, Eberh. Geschichte der medizinischen Fakultät der Universität Heidelberg 1386-1925. XAIII + 339 S. Heidelberg, C. WINTER, 1926. ISIS

53. — PHARMACY, PHARMACOLOGY, TOXICOLOGY.

Andel, M. A. van. Klassieke wondermiddelen. *Bijdragen tot de geschied. der geneeskunde*, 7, 161-176, 315-322, 1927. ISIS

Bouvet, M. Les apothicaires de la Bastille. *La Pharmacie Française*, 30e année, 81-94, Paris 1926. ISIS

Se basant sur des documents inédits (presque tous sont empruntés aux Archives nationales et à des Archives communales) l'historien parle de la

vie et des actes principaux des douze apothicaires qui se sont succédé à la Bastille de 1647 à 1789, c'est-à-dire depuis JEAN POISSON jusqu'à LABORIE en passant par DE LA LANDE, JAUSSENT, DAMARON, COLOMEY, FAVIÈRES, REILHE, FOURNIER, CARRÈRE, LECOQ et HUREL. L. L.

Canezza, Alessandro. Pulvis jesuiticus. Note storiche sulla scoperta e diffusione della china. 30 p. Tivoli, MANTERO, 1925. ISIS

Ferchl, Fritz. Illustrierter Apotheker-Kalender 1927. (Deutsche Apotheker-Verein, Berlin N. W. 87, Levetzowstrasse 16 B.) ISIS

This is the third year of this illustrated calendar. Two good halftones with explanatory text are given for each week of the year. As the author states, it is a sort of « Bilderarchiv » of pharmaceutical history. The usual variety of illustrated material appears, but special attention is devoted to pharmaceutical containers, the pots de pharmacie, many of which would do credit to any art museum. This calendar should be welcome to teachers of the history of pharmacy who are in search of ready illustrative material. E. K.

Folch y Andreu, Rafael. Elementos de Historia de la Farmacia, publicados por la Asociacion oficial de Estudiantes de Farmacia de Madrid. 736 p. Madrid, Graficas Reunidas, 1923. ISIS

Folch, Raphael. L'enseignement pharmaceutique en Espagne du Moyen-Age à nos jours. *Bull. Soc. Hist. Pharm.* no. 51, 253-257, Paris, 1926. ISIS

Gilg, Ernst, und **Schürhoff, P. N.** Aus dem Reiche der Drogen. Geschichtliche, kulturgeschichtliche und botanische Betrachtungen über wichtigere Drogen. 272 p., illus. Dresden, SCHWARZECK, 1926. ISIS

Guitard, E. H. L'élève en pharmacie sous l'ancien régime. *Bull. Soc. Hist. Pharm.* 1925, 89-100, 146-160. ISIS

Se basant sur d'authentiques documents dont il fournit les références, l'auteur étudie les conditions d'existence des professionnels et apprentis pharmaciens depuis le XV^e^ siècle jusqu'à nos jours. Aux XV^e^ et XVI^e^ siècles la durée d'apprentissage dure trois ou quatre ans; l'apprenti doit être présenté par des notables, faire son tour de France et ce n'est qu'au bout de sept ou huit années de patience et de labeur que, devenu maître, il est admis à tenir boutique. A la fin du XVII^e^ siècle, on exige en outre que l'apprenti ne soit pas protestant. Au XVIII^e^ siècle l'apprenti est « élève en pharmacie » avec les statuts du Collège de pharmacie (1780). L'auteur étudie ensuite les questions juridiques qui s'attachent à l'emploi des élèves et cela lui permet de revenir sur les exigences des anciennes corporations. En 1484 par exemple, elles demandent aux candidats un examen, un chef-d'œuvre, un serment, des bouquets et des cadeaux, et un droit d'entrée.

La Révolution de 1789 n'apporte pas de changements notables dans la situation des élèves. La loi de germinal an XI maintient huit années d'appren-

tissage, mais réduit le stage à trois ans. En 1854, tous les pharmaciens doivent passer par l'école. En 1885 des conditions strictes de scolarité et de stage sont exigées. En 1909 celui -ci est fixé à un an. L. L.

LaWall, Charles H. Four thousand years of pharmacy. One vol. pp. 665, with 64 pages of illustrations. J. B. LIPPINCOTT & Co., Philadelphia and London. 1927. ($5.00.) ISIS

This is what the author writes about his new venture : « What is pharmacy ? The story is locked up in ancient tomes and forgotten volumes. When we unravel the tapestry into which the picture of pharmacy is woven we find intermingled in the warp and woof the glowing history of an important art, embellished with the golden threads of romance, the black threads of mystery and occultism, and the vari-colored fibres of many allied arts and sciences. The picture is one of which any pharmacist may be proud. In it he will find priest and philosopher, poet and painter, king and pope, knave and charlatan, as practitioners of the art in centuries gone by. Fascinating bypaths leading to forgotten treasures of curious lore await him who strays along the highway of this famous quest, for the search for a panacea, a catholicon, a veritable elixir of life which should cure all ills as if by magic, was the animating motive in the evolution of pharmacy. Astrology and magic also play their parts, and before our eyes alchemy blossoms into chemistry. This fascinating work is the outgrowth of more than ten years' experience among the advanced students of the Philadelphia College of Pharmacy who have shown interest in knowing more of these « quaint and curious volumes of forgotten lore ». E. K.

Lewin, L. Phantastica, die betäubenden und erregenden Genussmittel. Für Ärzte und nicht-Ärzte. 2. erw. Aufl. VIII + 465 S. Berlin, STILKE, 1926. ISIS

Lewin, Louis und Löwenthal, John. Giftige Nachtschattengewächse bewusstseinstörender Eigenschaften im culturgeschichtlichen Zusammenhange. *Janus*, 30, 233-270, 1926. ISIS

Dans cette étude des solanées vénéneuses, mandragora officinalis, hyoscyamus niger, atropa belladona, scopolia atropoides, datura stramonium, duboisia myoporoides, l'auteur recherche jusqu'à la plus haute antiquité les données historiques concernant chacune d'elles, les noms ou surnoms qu'elles ont portés, les caractères surnaturels qui leur ont été attribués, et ce que l'on sait de leur emploi et de leur dissémination. L. G.

Robertson, W. G. Aitchison. The use of the unicorn's horn, coral and stones in medicine. *Annals of Medical History*, 8, 240-248, 1926. ISIS

Thomson, Sir St. Clair. Antimonyall Cupps : Pocula Emetica or Calices Vomitorii. *Proc. Roy. Soc. Med.*, 19, *Sec. Hist. Med.*, 123-128, 1926. ISIS

Two cups are described from the collection of Mr. A. DE NAVARRO, London. They are made of metallic antimony: wine standing in them dissolves the

antimony in sufficient amount to furnish an emetic dose of the drug. THOMSON's paper is illustrated by an excellent reproduction of a painting, showing the cups and their original leather cases. H. R. V.

Urdang, Georg. Der Apotheker als Subjekt und Objekt der Literatur. 181 S., 16 Bildn. Berlin, SPRINGER, 1926. ISIS

See *Isis*, 8, 822.

Urdang, Georg. Wesen und Bedeutung der Geschichte der Pharmazie. Drei Vorträge. 42 S. Berlin, SPRINGER, 1927. ISIS

VIII. EDUCATION

(The methods of accumulating, imparting and diffusing knowledge.)

54. — EDUCATION

(Generalities, methods, colleges, universities.)

Barnes, Arthur Stapylton. The Catholic schools of England. XI + 255 p. London, WILLIAMS and NORGATE, 1926. ISIS

55. — ACADEMIES, SOCIETIES, CONGRESSES. NATIONAL AND INTERNATIONAL ORGANIZATION OF SCIENCE.

(Societies and congresses devoted to particular sciences are classified under those sciences. For the international organization of science - Isis I, 195 - *see section* 17.)

Bortolotti, Ettore. L'Accademia e l'Istituto di Bologna, nel settecento e nel periodo napoleonico. 10 p. Estratto da l'*Archiginnasio*, anno 19, 1924. ISIS

56. — BIBLIOGRAPHY (*Methods, libraries.*)

Balcke, Curt. Bibliographie zur Geschichte der Preussischen Staatsbibliothek. (*Mitt. aus d. Preuss. Staatsbib*. hrsg. von d. Generalverwaltung. Bd. 6) X + 102 S. Leipzig, K. W. HIERSEMANN, 1925. ISIS

Reviewed by OTTO PNIOWER, *Deutsche Literaturzeitung*, 593-595, 1927.

MacNair, Mary Wilson. A list of American doctoral dissertations printed in 1925. VII + 206 p. Washington, D. C., Government Printing Office, 1927. ISIS

Pollard, A. W. and **Redgrave, G. R.** (*editors*). A short-title catalogue

of books printed in England, Scotland, and Ireland : and of English books printed abroad, 1475-1640. XVI + 609 p. London, For the Bibliographical Society by Quaritch, 1926. ISIS

Sparn, Enrique. El crecimiento de las grandes bibliotecas de la tierra durante el primer cuarto del siglo XX. II : Las bibliotecas Nacionales, Provinciales, Municipales y Populares con más de 100,000 volúmenes. 62 p. Cordoba (Rep. Argentina), Acad. Nacional de Ciencias, 1926. ISIS

Sparn, Enrique. El crecimiento de las grandes bibliotecas de la tierra durante el primer cuarto del siglo XX. III : Las bibliotecas especiales con 100,000 y más volúmenes (con 3 láminas y 11 figuras en el texto). IV. Resumen tabulario de las partes I, II y III (con 1 lámina y 1 figura). 87 p. (Republica Argentina, Academia Nacional de Ciencias, Misc. 15) Cordoba, 1926. ISIS

57. — MUSEOLOGY

(Museums and collections).

(British Museum). Department of scientific and industrial research. The cleaning and restoration of museum exhibits. Third report upon investigations conducted at the British Museum. V + 70 p., 58 pl. London, H. M. Stationery Office, 1926. ISIS

59. — ERRATA AND ADDENDA no. 14

(For previous errata, see Isis, IX, 604.)

Vol. IV, 581. second note, read BUERSCHAPER (one p.)
Vol. VII, 584, note 3. FORBES, HENRY OGG (not C.).
Vol. VIII, 540, note 4. NIC. MESARITES was *born* in 1163 or 1164 in Constantinople.
577, last 2 notes. Read FISCHER, ISIDOR (not J.)
633, note 4. *Idem.*
673, lines 15-16, for « depends on the inverse », read « varies as the ».
673, footnote (2), line 3, delete the first comma (,).
673, footnote (2), line 4, for « $(r + 1)/t\ (r - 1)/t$ » read « $(r + 1)/t$ et $(r - 1)/t$ ».
673, footnote (2), add « Compare J. M. KEYNES, A treatise on probability, London, 1921, p. 340. »

674, line 2 from bottom, for « log B » read « $\log_{10}$ B ».

675, footnote (1), for $\frac{a}{8.360\,(x+1/2)^3}$ read $\frac{7\,a}{8.360\,(x+1/2)^3}$

765, note 7. Read DIGBY (not Dibgy).

SARTON's *Introduction to the History of Science*. Vol. I. (From HOMER to OMAR KHAYYAM). Baltimore 1927.

55, line 19. supress first word (was).

380, line 10-11 from bottom. Supress the sentence : He wrote... of great consequence.

800, diabetes, 77 (instead of 97).

812. Kabbala ought to be written qabbalah (or else cabala, cabbala).

824. Pên ts'ao, read Shên-nung, instead of Shên-ming.

A few other misprints are not mentioned in these errata because they are too obvious to cause any error or confusion. I wish to express my thankfulness to the readers who take the trouble to make the above-mentioned corrections in their set of *Isis* and in my *Introduction*. I would advise them, after having accomplished that little task, to write their initials near mine at the bottom of this note, thus to indicate that these and the previous errata have been taken into account. G. S.

These and the previous errata have been corrected by...

Author's Index to the Twenty Second Bibliography

The Roman figures refer to centuries; the Arabic figures, to the sections of Parts II and III, which are numbered consecutively from 1 to 59. This index will enable one to find more easily the papers analyzed in the present bibliography, and also to see at a glance what each writer is doing.

June 24, 1927. DOROTHY WATERMAN.

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